

GOLF COURSE NEWS

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Study: Course maintenance costs up 4.9%

By PETER BLAIS

Course managers have done an excellent job trimming budgets while maintaining quality in the face of an ongoing recession, said a private country club industry consultant.

Golf course maintenance expenses rose just 4.9 percent in 1992 at private country clubs, compared to 9.8 percent the year before, according to a preliminary study of 90 courses by the accounting firm Pannell Kerr Forster. The survey is part of its annual *Clubs in Town & Country* report involving hundreds of private clubs nationwide.

Payroll and related costs (which make up about two-thirds of course maintenance budgets) rose a mere 3

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Bridging the 'market gap' with design technology

By MARK LESLIE

Walt Disney animators, move over. Larry Hawkins is center stage at his easel, and while his rendering of Mickey may not compare, his animation of prospective golf courses could win him an Emmy.

You know those televised fly-overs of golfholes? Hawkins' Geoscience Golf Development Services has developed a computer program to create similar three-dimensional animations of proposed golf courses. The digitized animations are transferred to videotape, creating a VHS-ready fly-over before dirt is ever moved.

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WHEN LIGHTNING STRIKES...

Who's liable? Golf course owners and managers want to know. One man's legal opinion can be found on page 43.



The celebrated Winged Foot elm was taken down in February.

Effective treatment for Dutch elm emerges too late for Winged Foot

By MARK LESLIE

MAMARONECK, N.Y. — Had it been available for public use earlier, a new fungicide may have saved the life of the famous American elm tree that until recently dominated the 10th green at Winged Foot Country Club's East Course.

Dr. R.J. Stipes of Virginia Tech in Blacksburg, Va., one of the leading American tree scientists, said the new compound, called Alamo, is effective against Dutch elm disease, which is believed to have killed the Winged Foot tree. Alamo — the ornamental

Continued on page 14

EPA insights on Browner, from fellow Floridians

By HAL PHILLIPS

WASHINGTON, D.C. — With 100 days of the Clinton Administration behind them, members of the golf course industry are still looking for clues as to how Carol Browner will conduct her business as head of the federal Environmental Protection Agency (EPA).

However, Florida land planners, superintendents, engineers and chemical suppliers are plenty familiar with Browner, who led the state's Department of Environmental Regulation (DER) for just under two years. Opinions vary, but most agree Browner is an aggressive, intelligent, politically motivated person whose views on the environment are essentially protectionist, but not necessarily set in stone.

"We had a lot of clashes with her. She has a very strong personality," said Bobby Brantley, former lieutenant governor and state representative who served as the first executive

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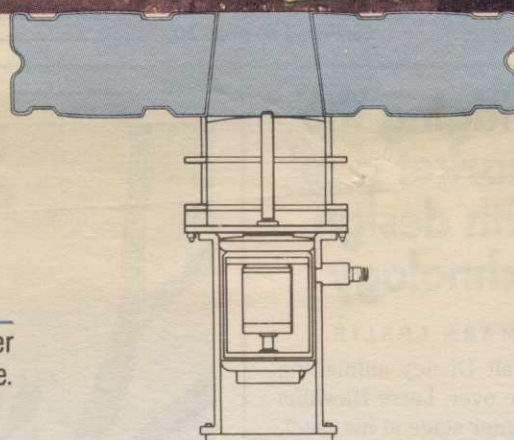


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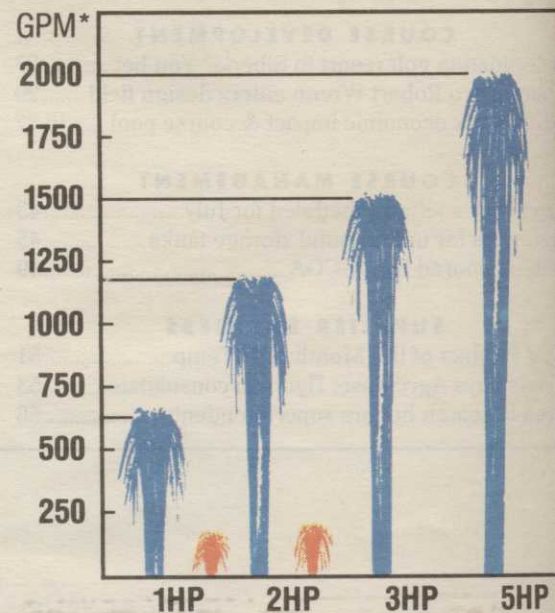
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NEWS IN BRIEF

COVENTRY, Conn. — The Town Council is interested in a plan that would place a \$400-a-day holistic health resort with 125 guest rooms, a heliport, and a golf course on John Bigley's property. The health center is expected to cost \$45 million. Town Council Chairman Richard Ashley said he would ask the Planning and Zoning Commission to "proceed with deliberate speed" in approving the preliminary plans for the resort.

...

CORPUS CHRISTI, Texas — The company that agreed to manage the city's two municipal golf courses missed its third deadline for posting a performance bond and city officials have decided to look for another management firm. Phoenix Group Holdings Inc. did not produce a \$4.1 million bond, which would have covered construction costs for a third municipal golf course.

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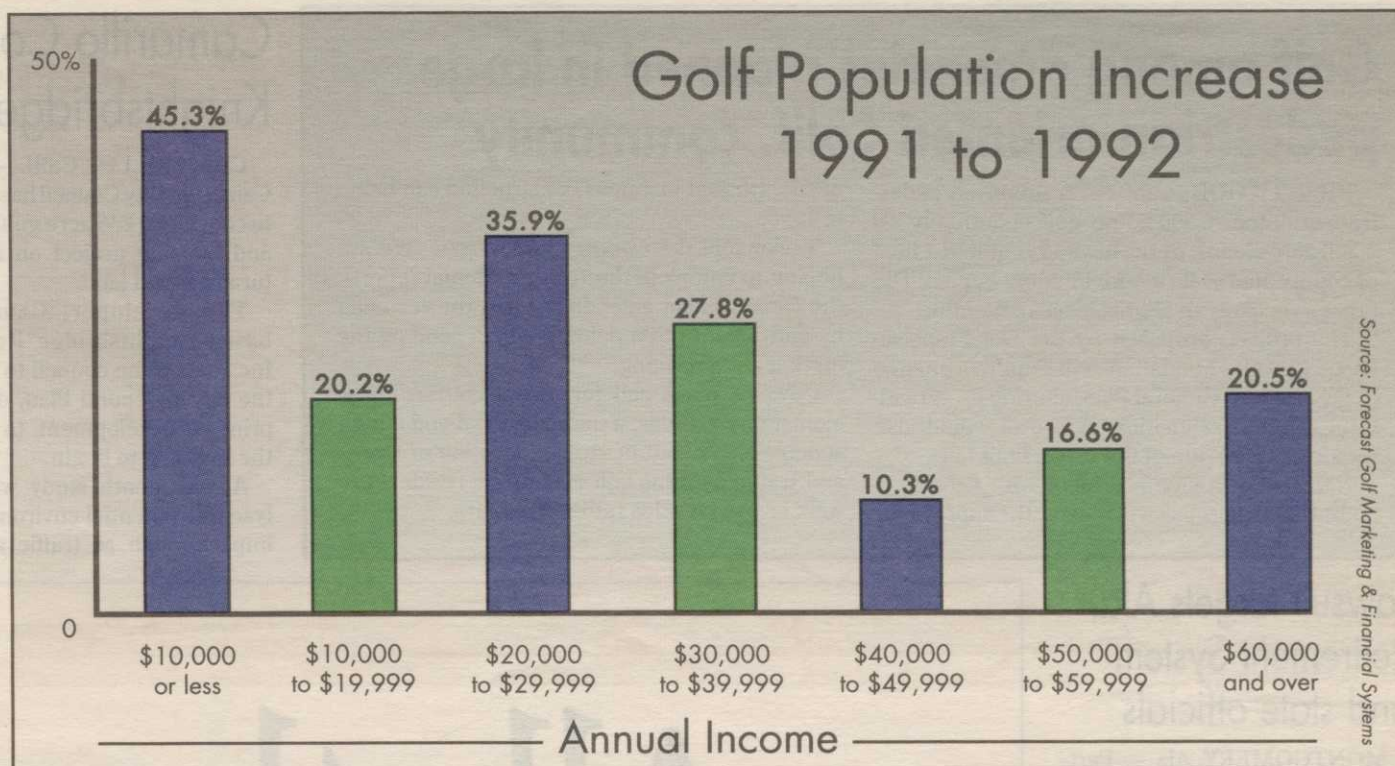
BELLEVILLE, Ill. — Construction of a \$6 million public golf course and 120-home residential development should begin in early summer. Investors hope nine of the 18 holes will be ready for play by summer 1994. The course will be known as The Golf Club at Dunnridge. Lohmann Golf Designs has been retained to design the course and Garard Golf Inc. will build it.

...

DELAND, Fla. — A consultant has recommended the county build a low-cost, "executive-length" course atop the Plymouth Avenue Landfill. The National Golf Foundation report recommended a \$3 million, 18-hole course, lighted driving range and putting greens.

...

KINGSPORT, Tenn. — Meadowview Golf Club hopes to begin construction of a new 18 holes later this spring. The club has offered Meadowview memberships to current members of its existing course in Kingsport and has recruited other golfers within the area.



Recession or no recession, player pool up 4.5 million

By HAL PHILLIPS

The latest numbers from Forecast Golf Marketing & Financial Systems Inc. indicate the golf industry has weathered the recent recession and, during 1992, augmented its player base by a hefty 4.5 million.

"The recession is over as far as the golf industry is concerned," said Forecast President Scott Marlowe. "The recession's greatest impact was on golfers with incomes between \$10,000 and \$40,000. However, these brackets rebounded in 1992 (see above chart)."

"Golf participation among persons with household incomes of \$50,000 or more continued to increase from 1989 through 1992, despite the recession."

Forecast's 1992 figures show there are 24.5 million golfers in America, up from 20.1 million in 1991. Golfers now constitute 13.5 percent of the general population. Men account for approximately 16 million (up

'The industry desperately needs more affordable golf courses to satisfy demand among the lower-income segment of the market.'

— Forecast's Scott Marlowe

1.2 million) and women number 8.6 million, an increase of 1.6 million (22 percent) over 1991.

In Forecast's book, a *golfer* is anyone who plays at least one 18-hole round of conventional golf per year. This excludes people who play only at ranges and alternative facilities, both of which grew at unprecedented rates during the recession, said Marlowe.

Via direct mail, Forecast randomly surveys 40,000 people each year—20,000 in the spring, 20,000 in the fall. The re-

sults are then tabulated and broken down in groups classified by sex, income, race and geography. It's a long process, evidenced by the fact that figures for 1992 are just now emerging.

"The numbers also indicate that golf is far more 'democratic' in its participation base than is the common perception — and as the Baby Boomers age, that will become even more true," said Marlowe, noting last year's 45.3-percent increase in golfers earning less than \$10,000 annually. Indeed, this group was the fastest growing in golf.

"The industry desperately needs more affordable golf courses to satisfy demand among the lower-income segment of the market," he continued. "Municipalities may be better equipped to provide golf services to lower-income golfers than the private sector, which has to contend with rising operating costs and profit incentive. Our demographic studies show that, from a market

Continued on page 37



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Golf among amenities planned in large pedestrian-oriented Calif. community

BRENTWOOD, Calif. — A proposed pedestrian-oriented, 7,500-home golf community on 4,200 acres south of Brentwood requires a host of county approvals before building begins. The process is likely to take at least 18 months.

The project, proposed by the San Francisco-based Cowell Foundation, will require a change in the county's General Plan, altering its agricultural zoning designation. Approval would also require an override of the urban limit line.

Nat Taylor, a vice president with Cowell, is optimistic the project will receive the approvals it

needs. He said he hopes construction can begin in 1996.

Taylor told the *Contra Costa Times*: "We are hoping to complete the (environmental report), the General Plan amendment and the rezoning by mid-1994. At that point, it will depend on the market and financing."

Cowell's plans call for a golf course, three elementary schools, a middle school and a high school. The layout of streets, location of stores and traffic patterns will encourage residents to walk or use bicycles rather than cars.

Camarillo Council to consider Knightsbridge golf course proposal

CAMARILLO, Calif. — The Camarillo City Council has agreed to consider a 236-acre golf course and housing project on agriculturally zoned land.

The developer, Camarillo-based Knightsbridge Holdings Inc., asked the council to amend the city's General Plan, or blueprint for development, to enable the building to begin.

A nine-month study will analyze the potential environmental impacts such as traffic and air

pollution. The project will then come before the town's Planning Commission and ultimately back to the City Council for possible zoning amendments. Councilman Charles Gose said it looks like a good project.

Dennis Hardgrave, a Knightsbridge representative, said the course would be open to the public and also take private memberships. He said the course's fees would be "market driven."

Lawsuit targets Ala. Retirement System and state officials

MONTGOMERY, Ala. — Partners in a proposed 27-hole golf course near Gulf State Park have filed a \$30 million lawsuit against 17 parties, including the city of Orange Beach, the state employees' retirement boss David Bonner and conservation chief James Martin.

Charlie Graddick, who filed the suit on behalf of H/M Partners of Point Clear, said the planned development was "illegally blocked" in favor of an alternate plan backed by Martin and the Retirement Systems of Alabama.

Graddick's suit named 17 defendants, including Orange Beach Mayor John T. Ellis and several present and former members of the Orange Beach City Council.

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Ahmanson Ranch finally gets green light

VENTURA, Calif. — Ventura County supervisors ended six years of debate by approving the Ahmanson Ranch project. Two golf courses are part of the project that includes more than 3,000 homes.

The approval process finally came to a close when Ahmanson Land Co., a subsidiary of Home Savings of America, received amendments to the county's general plan, approval of its basic development blueprint, new zoning, and other initial approvals needed for the development.

The project includes 3,050 homes, 400,000

square feet of offices and shops, a 300-room hotel and the two golf courses. The project is located on the 5,443-acre Ahmanson Ranch, which is north of Calabasas and west of Los Angeles.

Over the years, environmental groups had protested the development because of its impact on the land. Linked to Ventura County's approval of the Ahmanson project was acquisition of nearly 10,000 acres of private property through a combination of developers' donations and a \$29.5 million purchase from entertainer Bob Hope.

Conn. layout to begin construction

SEYMOUR, Conn. — A Trumbull developer plans to build an 18-hole public golf course and subdivision as soon as May.

Arthur Muller, a Stratford engineer for developer Chris Bargas, said carpenters will begin building 23 single-family homes on the site before any work on the golf course starts.

Once the proper approvals are obtained from town boards, Muller said, the golf course work can begin. He estimated the course would take from 18 months to two years to complete, and

could be ready for play by 1995.

Bargas first proposed a golf course two years ago, but has delayed the project because of the sluggish economy. John Fanotto Jr., chairman of the Planning and Zoning Commission, said the town is awaiting the specific plans for the golf course.

Fanotto told the *New Haven Register*: "The course should make a nice addition to the town because it will keep a good portion of the property as open space. I think it will be an asset to the town once it is completed."

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Fla. developer saves flagging Aspen plan

ASPEN, Colo. — Jim Pearce, a Florida investor, has rescued a 370-acre golf course and residential development near the base of Buttermilk Mountain.

Pearce has taken over the \$30 million Pfister Ranch/Golf project and hopes to break ground as soon as possible this spring. He said that if all goes as planned, the golf course could be playable by fall 1994.

Pearce acquired the project from its original developer, Ma-roon Creek Development Corp. MCDC encountered difficulty in financing the project and faced the possibility of losing development approvals because of delays.

Forty-three single family homes, 37 townhomes, 53 employee housing units, a 173-acre 18-hole golf course have received county approval.

Pearce, a stock and futures trader and a member of the Chicago Board of Trade, said the total cost of the project may reach \$50 million.

He said he intends to finance the majority of it himself.

S.F. firm unveils major project

WATSONVILLE, Calif. — A developer has proposed building 1,400 to 1,800 housing units to complement a golf course on land bordering the environmentally sensitive wetlands outside the city.

Tai Associates, a development and architecture firm based in San Francisco, has contacted landowners in the Lee Road area west of Highway 1 about the proposed project.

Jim Van Houten, a Wetlands Watch member, has spoken to Steven Weir, vice presidents at Tai Associates, about the proposed development plans.

Van Houten told the *Santa Cruz Sentinel* newspaper: "My concern is that the project seems so dense. It will have an impact on the wetlands."

First N.J. Golf Mecca layout hits review stage

FRANKLIN, N.J. — Plans for a golf course that would become part of Sussex County's \$100 million golf preserve were recently discussed with the borough Planning Board.

The plans call for the Black Bear Country Club to be built on 250 acres in Franklin and Hardyston off Route 23. The club would be the first of 15 to 20 new golf courses proposed last summer for the northeast section of the county by The Sussex County Golf Pre-

serve Committee, a private development group.

Committee Chairman John Kurlander said he plans to buy what is now farmland from United Jersey Bank to build the first club, that would include a driving range, a 6,000-square-foot clubhouse and a parking lot.

Kurlander said the golf preserve region would attract \$200 million in capital investments, create at least 1,000 new jobs and attract hotel development.

Fla. official proposes selling three Brevard County courses to finance alternative projects

MELBOURNE, Fla. — If County Commissioner Scott Ellis gets his way, the county's three golf courses — Savannahs at Sykes Creek, Habitat at Valkaria and Spessard Hooland — will all be sold to private operators.

Ellis told the Melbourne edition of *Florida Today*, "You have to set your priorities in government, and golf courses just should not be priorities."

The proposal is expected to face stiff opposition from county golfers, particularly retirees who have moved into the area and made links a second home.

Because the courses are owned and operated by the county, their fees are lower than those at most privately-owned facilities, a crucial feature for players living on fixed incomes.

The three county-owned courses were built with income from bond sales, which are being paid off with income from greens fees.

Ellis has not formally proposed the idea to the rest of the commission, but says he has a carefully crafted plan that would spur private developers to build courses themselves. This way, he said, developers would avoid competing against municipally-funded golf courses.

Miss. state parks may be sites for McCumber tracks

TUPELO, Miss. — Representatives of McCumber Golf have told lawmakers it would cost \$5 million for each of three public golf courses proposed for nearby state parks.

Mark McCumber, president of the design division of the company, selected three sites — John Kyle State Park near Sardis, Percy Quin State Park near McComb, and the Ross Barnett Reservoir north of Jackson. They were chosen because of the proximity to Interstate 55 and the tourism potential.

The proposals by McCumber Golf would include an 18-hole "championship" course, practice tees/greens and clubhouses for each site. The courses will be open to the public.

Rezoning allows Ohio facility to add nine holes

LAGRANGE, Ohio — Township trustees have voted to rezone 75 acres of land from agricultural and residential uses to business and commercial — a move that will enable Indian Hollow Golf Course to expand.


Indian Hollow Lake Enterprises, which own 148 acres including the golf course, had asked for the zoning change in order to enlarge the facility to 27 holes. Currently, nine holes are in a flood plain area, which has not proven a suitable site for golf.

The zoning change will allow another nine holes to be constructed above the flood plain.

Debate rages over N.J. site

JERSEY CITY, N.J. — Activists want an arboretum and botanical garden in Liberty State Park. The Liberty State Park Development Corp. envisions a golf course.

Both sides squared recently. Environmentalists feel that a proposed 18-hole golf course in the development would drive away hawks, owls and other birds.



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Mich. developer calms neighbors' fears

OAKLAND, Mich. — Developer Raymond Leduc has assured neighbors their property values will not go down if his \$65 million development in White Lake Township becomes reality.

Leduc has proposed to build a \$65 million golf course and condominium complex on 235 acres located south of Cedar Island Road and north of Cooley Lake Road.

The property must be rezoned for the development to occur. Leduc has spoken to residents who live in nearby subdivisions about garnering their support for his project.

The Leduc development, however, has suffered setbacks. The township Planning Commission voted 8-1 at an October 1992 meeting to recommend the property not be rezoned. The Oakland County Zoning Coordinating Committee also recommend denial of the rezoning by a 4-0 vote. Concerns about the golf course itself and the proposed 20,000-square-foot residential lots accounted for the anti-development votes.

The fact that many of the current homes will back up to the golf course should actually increase their value, Leduc said.

Hills to design Ind. project

SHELBYVILLE, Ind. — Edinburg Town Attorney Dan Patterson has revealed plans to develop a \$45 million golf course, housing subdivision and commercial center on 300 acres adjacent to Edinburg.

Patterson said the Town of Edinburg must approve annex of the tract before plans can move forward. The site is bounded by I-65 on the east, the Bartholomew County line on the south, the Johnson County line on the west, and Indiana Rte. 252 on the north.

The 18-hole course would be

public with limited memberships. One feature of the \$3 million course would be a five-acre lake. Arthur Hills Architects of Toledo, Ohio, would build the course.

Indian Trace Group, a partnership headed by former Edinburg Councilman Carl Crider, is developing the project. In addition to the golf course, the project will feature 200 homes with an average price of \$135,000.

If Edinburg approves of the project, construction could begin as early as October with golf course play starting June 1, 1995.

Guthrie seeks reversal of Mich. wetland ruling

CADILLAC, Mich. — A lawyer for golf course developer Paul Guthrie has argued in Wexford County Circuit Court that Guthrie's conviction for destroying wetlands should be overturned.

Judge Charles Corwin took the matter under advisement, saying he will issue a written ruling.

Guthrie, 57, was sentenced to 200 days in jail and ordered to pay fines and costs of \$13,500 after a jury convicted him of environmental offenses at the Briar Valley Golf Course. He spent a little more than two months in jail before being released on appeal.

Both Guthrie and Briar Valley Inc., principally owned by his wife, are in bankruptcy and facing nearly \$1 million in claims.

Council OKs \$2.5 million Ill. course

FAIRVIEW HEIGHTS, Ill. — Plans are progressing quickly for a new 18-hole course and home development here.

The Fairview Heights City Council met with Ken Bunetic, the project administrator, to discuss the plans. The council voted 8-0 to push forward with the development, which involves a \$2.5 million golf course and 250 homes.

Course construction should begin in July. Bunetic hopes to open nine holes by summer 1994.

Bob Garard of Garard Golf will design and build the course.

Course converted to subdivision

RIVERWOODS, Ill. — A local country club will soon become part of a subdivision — that is, when the builder decides what kind of houses should be constructed.

The former 18-hole Thorngate Country Club property will be converted into Thorngate Country Club Village. Lexington Homes will handle the make-over. The 151-acre development will have two lakes and 289 luxury homes.



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First golf course opens in tiny Asian nation of Macau

By ROBERT GLUCKSMAN

MACAU — The first and only golf club in this 6-square-mile Portuguese enclave of 500,000 people opened for play in late January.

Perched on a bluff overlooking Hac Sa cove, the new Macau Golf & Country Club takes advantage of the territory's sweeping views over long sections of the Pearl River delta and the South China Sea.

Conceived by Dr. Stanley Ho, the commercial force behind

Macau's development, the project has been a decade in planning and nearly three years in construction.

The 6,511-yard, par-71 course is an Isao Aoki design. The front nine is open and the back nine will be playable in early summer. Club Corporation of Asia will manage the club under a 10-year contract. A 206-room Westin hotel and yet-to-be-approved casino are part of the complex.

The course is demanding and very narrow.

Superintendent Barry Mueller speaks of it as "almost a target course. You need to aim for specific spots on the fairways rather than trying to hit it as far as you can."

Most regular-distance landing zones feature bunkers, cliffs, trees and water hazards. Wind is a constant hazard, sometimes even while putting. Mueller expects the pro shop to do a brisk ball business.

Constant elevation changes and roll, are prominent features. The

3rd hole is 90 meters above sea level while the 18th runs just back from the beach.

Golfers, so far, have preferred to walk (with caddies) rather than use carts. Mueller expects that will change, pointing out that the soon-to-open back nine involves a lot more clambering up and down the peninsula's hills and cliffs.

The Bermudagrass looks strong, especially encouraging given the decomposed granite dominating the South China soil. Some young trees, though, have

had difficulty with the cool winter winds.

Water should not be a problem with rain water, city water and effluent readily available.

Fees at Macau will be somewhat lower than Hong Kong clubs, with memberships running around US\$90,000. Current membership stands at 750.

The course will be closed to the public, with limited play for hotel guests.

Greens fees range from US\$80-100.

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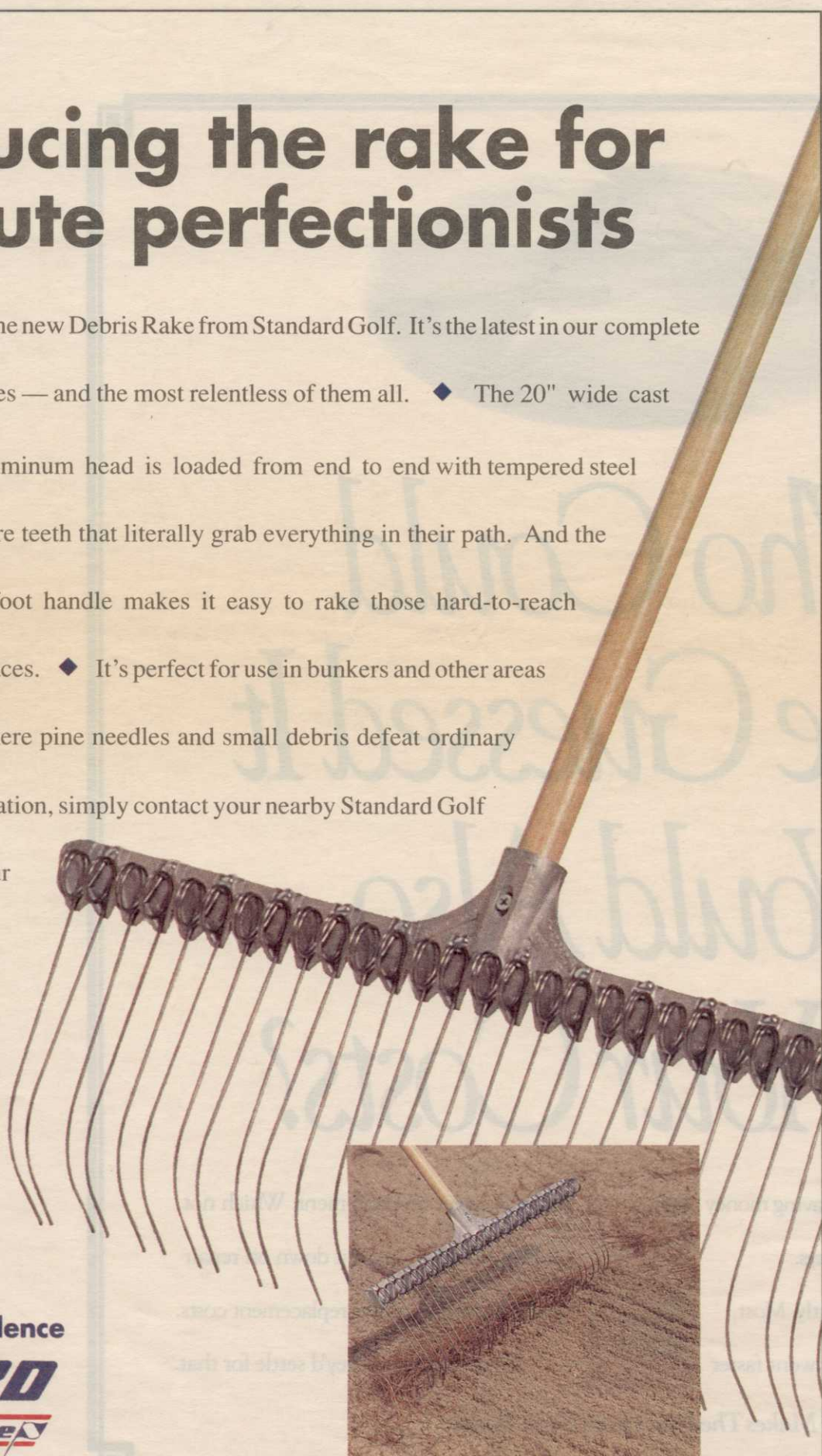
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Neighbor files suit against La. club

BOCARATON, Fla. — Suzanne Fries is angry because her home is on the third hole of a busy golf course and is filing a lawsuit to require the owner to move the third tee.

Fries thought it would be great to have her property abutting Boca Raton Executive Country Club's 3rd hole. But after she learned that up to 50 balls visited her property daily, she changed her mind.

She told the *Boca Raton News*: "It's beyond the normal course of what you'd expect living next to a golf course. The golfers drive their carts into our backyard and mow down our trees and bushes."

The suit states: "The plaintiffs' entire backyard, including the pool, is rendered useless because of the danger of being struck by a golf ball. Peter Fries has been struck by golf balls on two occasions."

Practice range gets nod from county

TURLOCK, Calif. — The Merced County Planning Commission recently approved Robert and Eileen Warnke's proposal to build a driving range just north of Highway 99.

The Warnkes hope the range will be open for business this summer. It will be located on 13 acres of property they own.

The new lighted facility will include a net-enclosed, 300-foot driving range; a shorter range for iron practice complete with greens; a variety of putting greens; and four chipping greens for sand.

Corrections

Because of an editing error, an author's name was spelled incorrectly in the March edition of *Golf Course News*. The byline atop the story on page 20 should have read, "By David Thraikill."

...

A newly planned course listing in the February issue incorrectly listed Tom Rollins as the contact for the Twin Hollow Golf Course in St. Louis. The contact should be Bill Cunningham at 314-878-6252.

Minn. pair gets zoning approval for Hidden Greens II project

SOLON SPRINGS, Wis. — The Douglas County Zoning Committee has unanimously approved a conditional use permit for Leonard Swanson and Bob Baldwin of Hastings, Minn., developers of a 200-acre, \$2 million golf course project slated to break ground here this spring.

Modeled after "Hidden Greens," a golf course developed by Swanson and Baldwin back in Hastings, "Hidden Greens II" has garnered broad community support. As many as 18 months ago,

120 local residents began working on project approval.

Addressing some of the community's concerns, Frank Giesen, chair of the Solon Springs Development Commission which is overseeing the building of the golf course, said the developer will use natural fertilizers and specific grasses to reduce or avoid the use of herbicides and pesticides.

In addition, Giesen said there are no plans to encourage further residential development along the site.

House removes tax benefit for Kansas clubs

LAWRENCE, Kan. — Representatives of two Lawrence country clubs say they are disappointed in recent action taken in the Kansas House of Representatives to keep country clubs from being considered as non-profit organizations for property tax purposes.

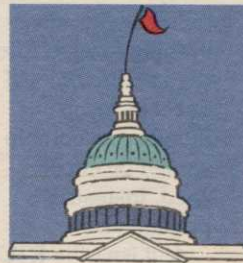
The House passed a bill strictly limiting which non-profit organizations receive a property tax break under a constitutional amendment approved by voters in November, 1992.

The Alvarado Country Club has incurred a huge increase in property taxes since a

1989 property classification amendment went into effect. Bob Billings, president of Alvarado, said the club's property taxes went up from \$40,000 to \$120,000 after reapportionment.

Lawrence Country Club members have also felt the sting of higher property taxes. Member Bob Stephens noted that increased taxes have to be passed onto the golfer, which adds to green fees.

Stephens said country clubs should not be taxed at commercial rates because the property is not zoned for commercial use.



Council told course presents no risk

MADILL, Okla. — City councilors have yet to approve a \$2.38 million municipal golf course, but developers claim the city will bear no financial responsibility.

Tripp Davis, a consultant for the city, said three golf course development companies have been asked to submit proposals to build an 18-hole course.

According to a THK Associates Inc. feasibility study, a golf course would be feasible for the community, with 40,000 rounds of golf a year expected to be played.

The study also estimated the course would cost \$2.38 million to construct, using a lease-purchase plan in which the city would not be liable for the initial funding. The city would, however, take over the course after a certain number of years.

CC at The Legends to add 27 new holes

ST. LOUIS, Mo. — A \$100 million expansion project will add 27 holes to Eureka's Country Club at the The Legends.

S. Lee Kling, chairman of CCTL's parent firm, New Legend Associates Inc., said Doral Hotels & Resort Corp. will become a partner in the development and manage The Legends.

In addition, the project will include 60 corporate townhouses, a 300-room hotel and conference center. Kling said nine holes will be added to the existing 18. The resulting 27 will be limited to use by the club's membership. An 18-hole course designed as semi-private will be built for guests at the conference center and resort.

Kling was not specific on when the new golf holes will be built.

The Legends' clubhouse will be increased to 57,000 square feet from 35,000.

Mass. club seeks loan to improve facility

WILBRAHAM, Mass. — Wilbraham Country Club (WCC) is hoping the town will help pay for turning the nine-hole facility into an 18-hole course.

The club's board asked town officials to underwrite a \$1 million bond to expand the course. The bond would need approval by Town Meeting vote, but WCC members would ultimately pay for the loan.

WCC's board has studied how to improve the facility. The clubhouse, kitchen and bathrooms need repair.

Board members do not expect to have finalized plans ready for the Annual Town Meeting on April 24.



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Plucking issues from the golf industry cupboard

• It's that time of year — time to bash the ubiquitous **Resolution Trust Corp.** and its high-handed, bureaucratic approach to free-market issues.

The RTC will stage a mid-June auction in order to unload the former Landmark properties, which include some of America's premier golf destination resorts. At this point (and nothing is ever set in stone with America's leading salvage wholesaler), the New Orleans auction will be winner-take-all. You bid on the whole package or nothing at all.

If there is local interest in Carmel Valley Ranch, for example, the potential buyer can't bid on it individually. The members at PGA West — who've shown interest in

purchasing their high-profile, four-course complex — would be foiled by this all-or-nothing format. After the Landmark legal debacle, local/member ownership should be encouraged. Instead, it's precluded.

And isn't the RTC's role to solicit the best possible price for these properties? Early estimates indicate the RTC would be fortunate to draw 60 cents on the dollar for this \$1.3 billion package. Such a deal...

• Pessimism reigned supreme in golf industry circles the morning of Nov. 4, as folks braced for the coming of a



Hal Phillips,
editor

Democratic administration. The wailing increased in volume and urgency when veep Al Gore hand-picked **Carol Browner** to lead the Environmental Protection Agency.

Before you unload the Golden Bear stock and move to Hudson Bay, step back for a moment. Let's wait and see, shall we? All accounts indicate Browner, the former head of Florida's Department of Environmental Regulation, is a politician at heart — not a tree-hugger. And while she may come across as unyielding in her development stance, Browning displayed a capacity for compromise during her

tenure in the Sunshine State.

Critics point to her deal with Disney, where hundreds of acres were set aside for protection in exchange for development rights. Well, trading open space for governmental approval is nothing new (just ask the would-be Homestead developers in Michigan). If that's the worst precedent Browner sets, the golf course industry should survive her.

• • •

• First the facts on Sen. Dennis DeConcini's bill that seeks to open up **military golf courses** to public play and private management. Bill S.234 has been sent to the Senate Governmental Affairs Committee, chaired by Sen. John Glenn

Continued on page 12

Getting right with the PC kingdom — er-r, queendom

Are you Politically Correct? Are you socially "with it"? Are you caffeine-free, yogurt-loving and driving a recyclable utility vehicle?

If you wonder, just check the pages of your daily newspaper, paying particular attention to stories on city, state and federal governments and to letters and commentaries. Maybe then you'll know whether you are... Politically Correct.

This ain't no joke. There's a grave movement in this country. Brought to us by the elite of the Politically Correct. It's sometimes hard to tell from outward appearances who these PC types are. They could be

in pinstripe suits in New York, or L.L. Bean jackets in the Great North, or sockless in Florida.

Like Darryl Zanuck directing those great old movies with casts of millions, they are directing a cast of **tens** of millions. "Americans, pick up your standards and follow us Politically Correctites into the Age of Aquarius — the Dawn of Euphoria!" they call. Let's have a casting call, now.

In your best uptown accent say "tree butcher" but not "lumberjack." Or "counterfactual proposition" but not "lie." Or "botani-



Mark Leslie,
managing editor

cal companion" but not "flower."

Politically Correct. It's a creature of our time. We carry "processed tree carcasses," not paper bags. A person who engages in an act of "ecotage" (PC talk for "sabotage") in an

attempt to save the environment (such as using tree spikes) is called an "ecowarrior" but certainly **not** an "ecoterrorist."

The sorry part is that Politically Correct is too often Factually Wrong. It's sometimes synonymous with Morally Deranged.

PC talk, instead of deleting segregation from society, in fact multiplies it. It fragments, it tears, it builds walls.

It's like quotas. What's a quota if not discriminatory?

Martin Luther King's dream was that society **disregard** color, not give any group special treatment.

PC separates, concentrating on our differences.

My solution? Let's all start another movement. Call it Socially Moral. Or Legitimately Truthful. Or Unabridgedly Right. (Someone out there is bound to have a brilliant

Continued on page 12

Letters

HOMESTEAD ADDENDUM

To the editor:

A story by Peter Blais [February issue of *Golf Course News*, page 3] contains inaccurate or misleading statements that you and your readers should be made aware of.

The citizens group referred to by Mr. Reddicliffe is a small group of (6) people with financial interests in the Homestead Resort. This committee has invited the Glen Lake Association, Friends of the Crystal River, National Dunes Advisory Committee and the citizens council of the Sleeping Bear Dunes area to sit in on its meetings but none has endorsed the land exchange.

In conversation with many people of these organizations, the reasons given is that they do not want to participate in the ongoing political debate and those who are long-term locals know of many parcels of private acreage most suitable for 18 holes golf that are available nearby that could have ended the hostilities as many as five years ago.

This long-standing golf course debate could have ended long ago had not the owner and investors of the Homestead Resort insisted on violating our state and national wetland laws, and this has done

much damage to the image of the golf course industry.

I am writing you of my concerns because of my employment in the golf course management industry.

Fred Anderson
Traverse City, Mich.

REMEMBER NEBRASKA!

To the editor:

I certainly enjoy receiving my copy of *Golf Course News*. There is always new information in it. I do, however, have one selfish complaint.

When I read about new golf courses and their stage of de-

velopment, the state of Nebraska is almost always omitted. I assume this is because you have no correspondent in that state. But, we'd like the world to know it's not because we aren't progressive in golf course development.

I have been doing golf course rating for the last 17 years and have a fair idea of the development of courses in Nebraska. Accordingly, I'm enclosing a chart of our work done here in the last three to four years.

You may also like to know Nebraska is the fastest growing golf state in some of the National Golf Foundation rating categories.

Keep up your fine newspaper.

Del Ryder
USGA Sectional Affairs
Grand Island, Neb.

Editor's note: Thanks for the information, and we'll try to keep a closer eye on golf course development in Cornhusker country.

More letters, next page

AN ODE TO THE EPA...

*EPA regulates our external conditions.
Whatever we do requires its permission.
Its staff is composed of lawyers organic,
Whose method of work is creation of panic.
The ice caps are melting!
The oceans will flood!
Monoxide is increasing and ruining our blood!
The air will be toxic and smother our breath,
Which everyone knows is a horrible death!
We're destroying the ozone with aerosol cans.
Which greatly distresses deodorant fans.
Through a gullible press they create alarm,
Over chemical hazards from factory and farm.
Pesticides are a threat more fearful indeed,
Than nematode, fungus, insect, and weed.
They worry we'll eat astronomical doses,
If you eat fifty tons! It will give you cirrhosis!
They doubt all research, but believe every rumor,
Apprehensive do-gooders with no sense of humor.
When it comes to decisions, they do as they please,
All inscrutably written in governmentese.*

B.E. Day, plant physiologist
Berkeley, Calif.

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THE NEWSPAPER FOR THE GOLF COURSE INDUSTRY

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GOLF COURSE NEWS

Trees: Tough to live with, yet you can't live without

By DR. R. JAY STIPES

Can anyone imagine a golf course devoid of trees? Just turfgrass, perhaps with a sprinkling of woody and herbaceous ornamentals? Despite the agonizing they sometimes cause golf course superintendents, I think not!

Trees figure prominently in the names of approximately 275 country clubs in Virginia alone. There are Lonesome Pine, Cherry Hills, Burning Tree, Cedars, Cedar Crest, Longwood, Chestnut Creek, Cypress Cove, Dogwood Hills, Evergreen, Glen Oaks, Great Oaks, Tall Oaks, Holly Hill, Oakwood, Pinecrest, Poplar Forest, Roundwood, Stumpy Lake, Willow Brook, Woodlawn and others.

Trees are focal points, bold statements, spectacular benchmarks, historic markers for generations of golfers. Trees just happen to be the only living links to the historic past.

And golfers enjoy, remember and often savor the beauty and "permanence" of handsome specimens that they remember

Dr. R. Jay Stipes, called the "Tree Doctor" in Virginia, is a lecturer, writer and researcher in plant pathology who has taught for 25 years at Virginia Tech in Blacksburg, Va.



Dr. R. Jay Stipes

over a lifetime of golfing.

For many, trees become "old friends" that they "know" and pass on their golfing rounds.

Family generations frequenting the same golf courses see the same trees standing as silent sentinels. Great grandparents, grandparents, parents, sons and daughters and grandchildren have known the same tree on some old golf courses.

A very large, old and venerable elm at Winged Foot Golf Club in Mamaroneck, N.Y., recently succumbed to Dutch elm disease [see story, page 1]. This tree was well known by President Eisenhower and other famous persons of the past and present.

Its necessary removal has left a gaping hole there.

In addition to historic landmarks, trees do more for us than we would ever realize. The bumper sticker that exclaims "Trees Can Save the Earth" may be more profound than just an advertisement for the forestry folks.

Trees exchange clean air for foul in vacuuming up carbon dioxide and other

gaseous wastes and give essential oxygen in return. They also "excrete" pure water through the transpiration process.

They serve as screens for ugly sites and irritating noises. Erosion control is difficult, if not impossible, on certain sites where precipitation is excessive on some types of soil.

They certainly enhance real-estate values! Try selling a house with a treeless landscape compared to one with nice, mature, beautiful specimens, especially in warm climates. Much real estate can only be sold when forested.

Most of us love birds, and trees provide shelter and food for many of them, not to mention other wildlife. Trees are aesthetically unique and essential in providing varied interests in different shapes, sizes, colors and dimensions. They also provide a sense of health and permanence, a part of that subliminal or subconscious linkage to the good earth from which we came. They impart a sense of belonging, therapy and health, and tend to lessen our fear of mortality as we mingle with strong, sturdy, old specimens.

Trees are nature's best air conditioners. Some houses or other buildings are only

Continued on page 12

Royce Richardson, 67

PHOENIX, Ariz. — Royce R. Richardson, 67, a native Arizonan and resident of Paradise Valley, passed away at St. Joseph's Hospital here on March 7. Since 1985, Mr. Richardson served as president and chief executive officer of Farmers Marketing Corp., a wholesale seed business based here.

Mr. Richardson's career in agriculture and seed production spanned 40 years. Born on April 27, 1925, in Miami, Ariz., he served in the Navy during World War II before attending the University of Arizona in Tucson, where he earned his bachelor's degree in range management.

In the early 1960s, Mr. Richardson established a marketing cooperative with Bermudagrass seed growers in the Wellton-Mohawk Valley that helped unite and stabilize the Bermudagrass industry, enabling it to become a crop of significant importance and contribute millions of dollars to the state's economy. He was vice president of Valley Seed Corp. of Phoenix; president of Pacific Seedsmen's Association; board member of American Seed Trade Association; board member of Western Seedsmen's Association; and president of the Arizona Crop Improvement Association, where he served on the Pure Seed Advisory Committee at the time of his death.



Mr. Royce Richardson

Mr. Richardson leaves his wife of 45 years, Tink; two sons, Royce Rene Richardson and Sheldon E. Richardson; and two grandchildren, all of Paradise Valley. The family has requested that donations in Mr. Richardson's memory be made to either the American Cancer Society or the Royce R. Richardson Memorial Fund, which will be used to endow a scholarship at the University of Arizona. Donations should be mailed to Farmers Marketing Corp., c/o Elaine Jordan, 3501 E. Broadway Road, Phoenix, Ariz., 85040.

Letters

BAVIER MADE A DIFFERENCE

To the editor:

North American golf superintendents typically recognize their colleagues from the Chicago area as trend-setters in our profession. Some of the finest golf courses are located in the greater Chicago District, and there is keen competition among superintendents to provide the best possible playing conditions for the golfers. As a result, there are so many excellent courses in and around Chicago that the entire PGA Tour could be played there over the duration of the summer season. Courses in this area are in excellent condition, and would require little preparation by superintendents for any PGA event.

Recently, a Chicago area superintendent became a distinguished and significant contributor to the industry. Michael Bavier, from Inverness Golf Club, wrote a letter that later was published by *Golf Course News*. He expressed a concise and skillfully worded criticism of the Golf Course Superintendents Association of America's proposed bylaw changes. The letter was widely acclaimed, and coagulated support on the part of superintendents to defeat proposed changes.

Bavier's letter in *Golf Course News* was the impetus necessary to galvanize support for the defeat of these proposed bylaw changes. The proposed changes would have altered the direction of the associa-

tion. These include the ability for the Board of Directors to regulate dues, change voting procedures (from chapter voting to individual balloting by mail), establishing regional liaisons, and numerous other changes.

GCSAA has elected Randy Nichols, superintendent at a top-notch 36-hole golf course near Atlanta, as its new president. Two incumbent directors, who had supported the proposed bylaws, were not re-elected. Apparently, the GCSAA is returning to its roots and is concentrating on assisting superintendent members.

Gordon Witteveen
Board of Trade Country Club
Toronto, Canada

The Golf Course News Development Letter

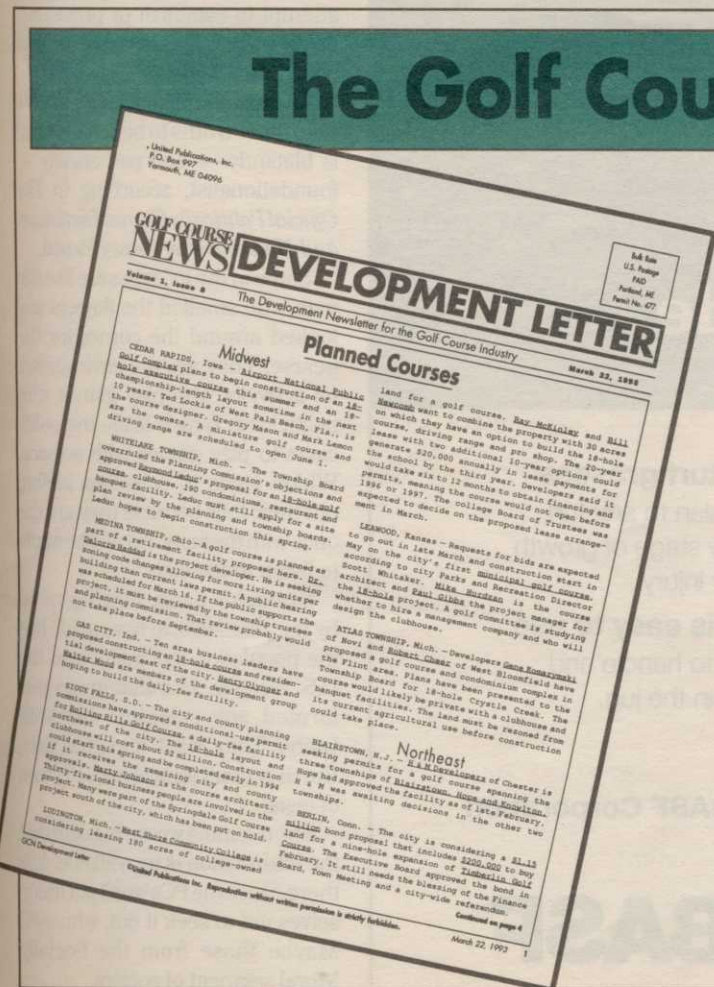
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GOLF COURSE NEWS
THE NEWSPAPER FOR THE GOLF COURSE INDUSTRY



Stripes on trees

Continued from page 10

endurable because of the shade provided by trees. Think of energy savings. And, lastly, at life's end, they serve as valuable fireplace and woodstove fuel.

IT'S A LOVE-HATE RELATIONSHIP

Now, the flip side of the tree story is the "hate relationship" as encountered by superintendents who have no "free lunches" in their care of the grounds which includes trees. Trees are continuously shedding creatures. They drop bark, branches, leaves, flowers and

fruits onto the manicured turfgrass.

Some need continuous pruning, feeding, and pest and disease management. Also, in heavy soils where trees are "seeking" moisture, oxygen and nutrients, roots often surface, causing a big problem.

Storm damage sometimes becomes a management pain.

Also, on many golf courses, the faulty choice of certain tree species results in tree care that could have been avoided had good counsel in tree selection been obtained. Soil compaction resulting from golfers' foot traffic and golf carts becomes problematic in some cases, and soil aeration becomes essential to

good tree health.

Are trees on golf courses worth it all?

I think even the cynic would have to agree that they are. An ounce of prevention is worth a ton of cure in tree culture and maintenance on golf courses.

Knowledgeable consultants in tree care are extremely important resources for superintendents, since turfgrass and not tree management is often their mainline work and expertise.

Tree culture, technically known as "arboriculture," is a rapidly changing field, and new science and art are forthcoming daily.

Phillips: Military course of action

Continued from page 10

(D-Ohio). DeConcini (D-Ariz.) originally submitted this legislation last summer, withdrew it, then reintroduced it in January 1993.

Now the opinions: This is a ridiculous bill, with all due respect to DeConcini. For the past five months, I've talked to 30-odd people involved in maintaining and managing these military layouts, which number 249

nationwide. The overwhelming consensus says security would be compromised, especially if the course were managed by a civilian entity. Most military superintendents indicated the courses could be more broadminded with their public play policies, but private management is out of the question.

Caveat: If the base is closed, all bets are off.

Leslie commentary

Continued from page 10
(name.)

Let's concentrate on our similarities, on those things that pull us together. Even if it hurts, let's tell the truth, not distort it with unbridled rhetoric. That way, even if we disagree on things, at least the facts will be laid out — not buried in shades of truths and untruths.

Two major problems I see: 1) the normal PC's belief in "biocentrism" and his/her/their stand against "foundationalism."

Biocentrism is the doctrine that every species has equal intrinsic value and that planet earth cannot be viewed solely as a resource for human beings. It is the central tenet of the so-called deep ecology movement, and is typified by the view of John Davis, editor of *Earth First! Journal*, that "eradicating smallpox was wrong. It played an important part in balancing the ecosystem."

Foundationalism is the doctrine that inquiry or thought can actually be grounded on pre-given principles that are true beyond mere belief or assumption. Postmodern analysis, PCs say, shows that no such principles or truths exist, and that any attempt to establish or prove they do is merely an exercise in self-constituted logic.

An example: The statement "We hold these truths to be self-evident" is blatantly — and pathetically — foundationalist, according to *The Official Politically Correct Dictionary and Handbook* by Henry Beard.

Some of the PC types are like the man who smelled the flowers and looked around the corner for the hearse. They are the environmental activists who play games with politicians. Which leads the politicians to play games with science. Which leads to scientists pulling out their hair because they are the ones with the facts. Yet no one wants to listen to the facts.

Example? Earth First's goal is, by the year 2000, to have made half the population feel guilty over the U.S. lifestyle. Has that group performed any scientific research lately? They want impartial data. But they don't want to take 10 years of tests.

The dilemma we are in is not that the information is unavailable. It is there. Since the PCs won't put themselves out to seek it out, who will? Maybe those from the Socially Moral segment of society.

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BRIEFS



SHIRLEY IS GEORGIA PRESIDENT

William Shirley of Idle Hour Club in Macon is the new president of the Georgia Golf Course Superintendents Association. Shirley is joined on the board by Vice President Mark Esoda of Atlanta Country Club and Directors Jim Dusch of Atlanta National Golf Club, Mike Hamilton of Harbor Club, Ralph Hinz of The Landings, Bob Perry of Griffin Country Club, Chuck Underwood of Northwood Country Club, Stephen Wilson of Druid Hills Golf Club, and Franz "Buck" Workman of Valdosta Country Club.

N.C. TURFGRASS EVENT PLANNED

RALEIGH, N.C. — The Professional Turf and Landscape Field Day will be held at the Turfgrass Field Laboratory (Field Center) on May 12. This North Carolina State University event is jointly sponsored by the Turfgrass Council of North Carolina and the North Carolina Landscape Contractors Association. For more information contact TCNC at 919-695-1333.

LONGVIEW TURF PROGRAM ACCEPTED

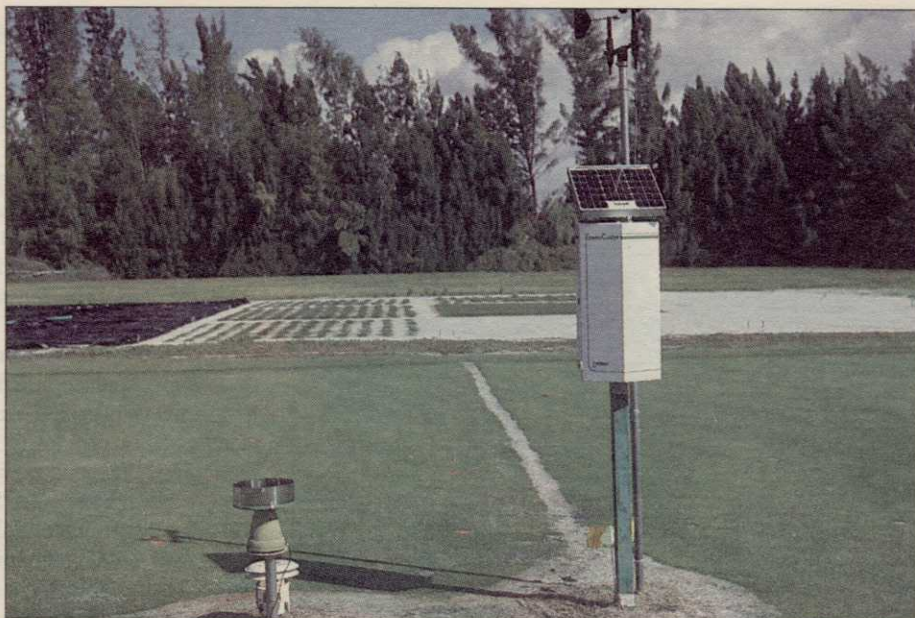
Longview Community College's grounds and turf management program has been officially accepted as an associate degree program by the Coordinating Board of Higher Education in the state of Missouri. Training coordinator Allen L. Earle said: "I feel very strongly that this program will be very beneficial to anyone involved in the 'green' industry. Currently, there is no horticulture degree program in the Kansas City area. It is our desire to present the highest quality training that will be pertinent to 'real-life' experiences."



N.C. EVENT BREAKS RECORDS

The 31st Annual North Carolina Turfgrass Conference & Show shattered all previous records, according to Tom Bland, president-elect of the Turfgrass Council of North Carolina. Bland attributed the success to a combination of factors, a total-event marketing plan. Twenty-two hundred and fifty turf industry professionals participated in more than 20 hours of educational programs focusing on effective turf management and environmental stewardship based on integrated pest management. Attendance was up 501 over last year's event. The 10th Anniversary Industry Trade Show boasted 159 companies exhibiting in 350 booth spaces. The previous show record was 302 booth spaces. Bland said most significant, he said, was the \$66,000 in cash contributions to the Research Endowment and Foundation.

Photo courtesy of the Univ. of Florida Fort Lauderdale



The University of Florida's new research green in the background was added last fall next to the old green. The Envirocaster system in the foreground, which collects weather data, is in the center of the old green. The hybrid Bermudagrass cultivar Tifgreen 328, on the left, and Tifdwarf, on the right, are maintained at 3/16-inch height. The new green is being planted with Tifdwarf.

Florida research green sheds light on effects of maintenance

By PETER BLAIS

The University of Florida's research green in Ft. Lauderdale has yielded interesting findings regarding the effects of nitrogen levels, various fungicides and maintenance practices on Bermudagrass putting surfaces, according to researchers and course superintendents.

New and ongoing studies involving pesticide movement through turfgrass, organic biostimulants and experimental Bermudagrass cultivars should help Southern superintendents grow stronger turf in the not-so-distant future, according to Monica Elliott, the university's Research and Education Center coordinator.

"The research green project has been very well received and well supported so

far," said Kevin Downing, superintendent at nearby Willoughby Golf Club. Downing is also chairman of the Florida Golf Course Superintendents Association committee that spearheaded development of the Otto Schmeisser research green. The facility opened almost two years ago.

Elliott listed some of the early findings on the original 20,000-square-foot USGA-spec green and the new 10,000-square-foot, 85-15 (sand-to-organics) root-zone mix addition added last fall:

- Synthetic nitrogen levels can be reduced a moderate amount without adversely affecting turf characteristics, although extremely low application levels do cause a dropoff in quality. Researchers tested low-, moderate- and high-

Continued on page 15



Of putting greens and reel grinders

By TERRY BUCHEN

One of the more "fun" aspects of being a golf course superintendent is to modify equipment to suit personal tastes, sharing tricks of the trade with our peers, and the art of time/motion studies.

With these thoughts in mind, I'd like to share a few new ideas in golf course management.

PUTTING GREEN CONSTRUCTION

One easy way to be able to locate the delineation of the native soil and USGA greens construction profile is to lay a 14-gauge irrigation wire completely around the green subsurface and attach both ends to the left-front irrigation head. Whenever the greens/collar edge is needed to be located, attach a wire-locator instrument to the wires and the exact edge can be found fast and easy, instead of using a soil probe to try and find the greens soil mix. We did this at Double Eagle Club on all of our greens during construction two years ago and it works great. In years to come, as any mowed edge gets

Editor's note: This is the first installment of a new monthly column we will print to provide helpful hints to golf course superintendents.

Continued on page 16

Tour of Duty

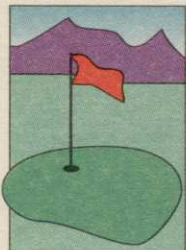
RICKY WIDEMAN
Harbor Town Golf Links
Hilton Head Island, S.C.
MCI Heritage Classic
April 15-18, CBS

Ricky Wideman was familiar with the nooks and crannies of Harbor Town long before he arrived in Hilton Head two years ago from Palmetto Dunes. Wideman used to crew at Harbor Town during the Heritage Classic while a student in the turf program at Horry Georgetown College in Myrtle Beach.

Now the 33-year-old native of McCormick, S.C. is running the show. He says the best/worst things about hosting a PGA tournament are closely related. "The best thing is everyone coming together to do the job right. The worst thing is the letdown afterwards. Everybody works so hard, and when it's over, we all get the post-tournament blues."

Things to look for: "We just went through a three-month renovation project, installing a new irrigation system and cart

Continued on page 20



DEAN CROUCH
Forest Oaks Country Club
Greensboro, N.C.
K-Mart Greater Greensboro Open
April 22-25, CBS

Dean Crouch, 31, came to Forest Oaks in 1989 from the prestigious Atlanta Athletic Club, where he served as assistant superintendent. Prior to that, he cut his teeth at Indian Hills Country Club in Marietta, Ga. Though he's a native of Columbia, S.C., Crouch is not a fan of University of South Carolina Gamecock red & black. He greatly prefers the bright orange of Clemson University, where he earned his B.S. in plant science.

Things to look for: "The biggest difference in the course is we just reconstructed the 18th green this past fall. Architect Clyde Johnston handled it with Fuzzy Zoeller consulting. We tried to do several things. We wanted to pick up more pin placements, and we lowered the green 3 feet to give players the feeling they were



Continued on page 20

MIKE LINK
TPC at the Woodlands
The Woodlands, Texas
Shell Houston Open
April 29-May 2, ABC

Mike Link, a 34-year-old native of Ponca City, Okla., came to the Woodlands after serving as assistant superintendent at the 27-hole River Plantation Country Club in Conroe, Texas. He is a 1980 graduate of Oklahoma State University with a B.S. in agronomy.

Things to look for: "It's been awfully wet here the last three years. I've been trying to apply a pre-emergent herbicide this week (March 5-9) and the rain has delayed that. Weather is the biggest headache for us. I have a game plan that I go by and, if the weather cooperates, everything goes like clockwork. If it doesn't you go to plan B, which can be pretty hectic. I've worked 12 events, so I've gotten to know the Tour officials pretty

Continued on page 20



Alonzi: Loss leaves 'void'

By MARK LESLIE

MAMARONECK, N.Y. — The biggest tree in the state of New York and the entire universe of golf, the landmark at Winged Foot Country Club had no nickname. But it was revered by golfers the world over. Today, it is remembered by them.



Bob Alonzi

"As you look at the hole, you just see a big void. It's very depressing for everybody," said Winged Foot superintendent Bob Alonzi.

"Although you say it was only a tree, it was not just a tree."

Indeed, the elm — estimated to be more than 250 years old — perfectly framed the 10th hole on Winged Foot's East Course, turning "a sure par-4 into a magnificent par-4," Alonzi said.

It stood 110 feet high at greenside, its 140-foot branch span intimidating even the bravest and best golfers. But a deadly enemy lurked unseen beneath its bark, plaguing the tree itself — until Alonzi's crews manned a crane, chain saws and chippers to cut it down in early February.



In its early stages Dutch elm disease causes "flagging," a condition causing the leaves to wilt and shrivel. If detected in its earliest stages, the tree can be saved by removing the infected limbs. Winged Foot crews did this successfully for years.

Alonzi, superintendent at Winged Foot for the last 10 years, said crews had monitored his elm at the 10th green since the 1960s.

He had kept the tree and three other "very, very valuable elm trees" on an annual preventive program using a fungicide.

"For the past four years we injected every year. Prior to that, we were injecting every two to three years," he said. "Even though it may seem a losing battle in the eyes of some people, we were able to keep it another 25 years. Hopefully, if we save them long enough, maybe the miracle chemical will come

along. Maybe the American elm will not be completely eliminated from the landscape."

Alonzi said when his crews cut down the old elm, the most critical act was to burn or bury the bark to destroy the beetles and their larva.

Now, he and his crew will now devote their attention to saving their three remaining American elms — including one overtopping the 2nd green on the West Course. It is two-thirds the size of the other. It's about the same size in height and canopy, Alonzi said, but the size of the trunk on #10 East was huge — 6 feet in diameter. #2 West is about 4-1/2 feet.

Winged Foot's elm

Continued from page 1

fungicide Banner formulated to be injected into elm and oak trees — has just received its Environmental Protection Agency registration to be used to fight Dutch elm disease (DED) as well as oak wilt in Texas. Both are caused by fungus in the same genus.

"It is an intravenous immunization," Stipes said, adding that while it effectively prevents Dutch elm disease, "there's a lot of injection technology that needs to be honed. We are always revising, updating and adjusting that technology."

He said Dutch elm disease is "very manageable by sanitation. That is, if you keep the Typhoid Marys out of the community, you keep your disease down almost to nothing. The problem is, many municipalities and parks and highway departments do not have the money to do this. People who have the money will have their trees injected. Others won't."

Stipes gave Winged Foot superintendent Bob Alonzi "an A-plus in what he does. He is a very conscientious caretaker. He was doing as well as any superintendent anywhere could do. The immune system simply gave out."

"Trees are like people. When they get old, their defenses start to break down. They become susceptible to things they would not ordinarily be susceptible to."

Alonzi said the tree had fought off Dutch elm disease a half dozen times over the past 25 years.

He said other experts agree with Stipes that the immune system finally collapsed, or the tree may have died from old age. It was estimated to be 250 to 275 years old.

Stipes, whose "patients" included the elm at Winged Foot, said: "Dutch elm disease is a lot like human can-

cer. You have to get to it early. The external symptoms belie the extent of the infection inside. You'll see two or three yellow leaves and think it's only beginning, yet look inside and the disease might be clear into the roots."

THE DISEASE

Dutch elm disease has annihilated millions of the trees in the United States since it was first discovered in 1930 in Columbus, Ohio, by Dr. Curtis May.

The Elm Research Institute in Harrisville, N.H., says the disease is caused by the fungus *Ceratocystis ulmi* that is spread by the tiny elm bark beetle. When the beetle emerges from under the bark of dead or dying elms covered with the sticky spores of the fungus, it flies to the nearest healthy elm to feed in the crotches of the new growth. There it deposits the fungus in the healthy tree. The DED fungus quickly moves into the water-conducting vessels of the elm, clogging the flow of water and nutrients to the tree.

In the early years, Dutch elm disease destroyed millions of elms, many dating from the 1700s.

It took decades of research to develop treatments to help save the American elms.

In 1983 DuPont Co. designated Elm Research Institute as exclusive distributor of Elm Fungicide, which contains the same chemical used since 1975 and known as Lignasan BLP — methyl 2-benzimidazolecarbamate phosphate, a derivative and close relative of the famous Benlate fungicide.

Elm Research Assistant Director Yvonne Spalthoff said the product is not a cure for DED. In preventive programs, Elm Research Institute has had a 98-percent success rate, she said. That rate drops to less than 50 percent if the tree already has the fungus.

Institute's mission: Plant the country in Liberty elms

HARRISVILLE, N.H. — A special tree-planting program designed for golf courses is expected to introduce Liberty elms around the country.

The fledgling program, inaugurated by the Elm Research Institute here, has signed on golf courses from Massachusetts to Nebraska without any publicity or advertisement.

Liberty elms are resistant to Dutch elm disease and the institute hopes they will be planted to replace dead American elms. Golf courses are perfect sites, according to institute Assistant Director Yvonne Spalthoff.

"They've usually got the space to start nurseries," she said.

Spalthoff said Liberty elms branch at a young age, taking on the classic vase shape even as early as 12- and 15-foot heights.

The institute can provide courses with hundreds of one- and two-foot-high Liberty elms.

A limited number of 12-footers is available to the institute through the Boy Scouts of America.

"We are trying to leave a legacy," said Craig Ferguson, superintendent at Lochland Country Club in Hastings, Neb., who has bought 200 Liberty elms through the golf course program. "Outside of drought and ice storms and whatnot, the one thing that's going to hurt the tree is Dutch elm disease. If you have a tree that's immune to that, you have left something that will be here as long as the golf course is."

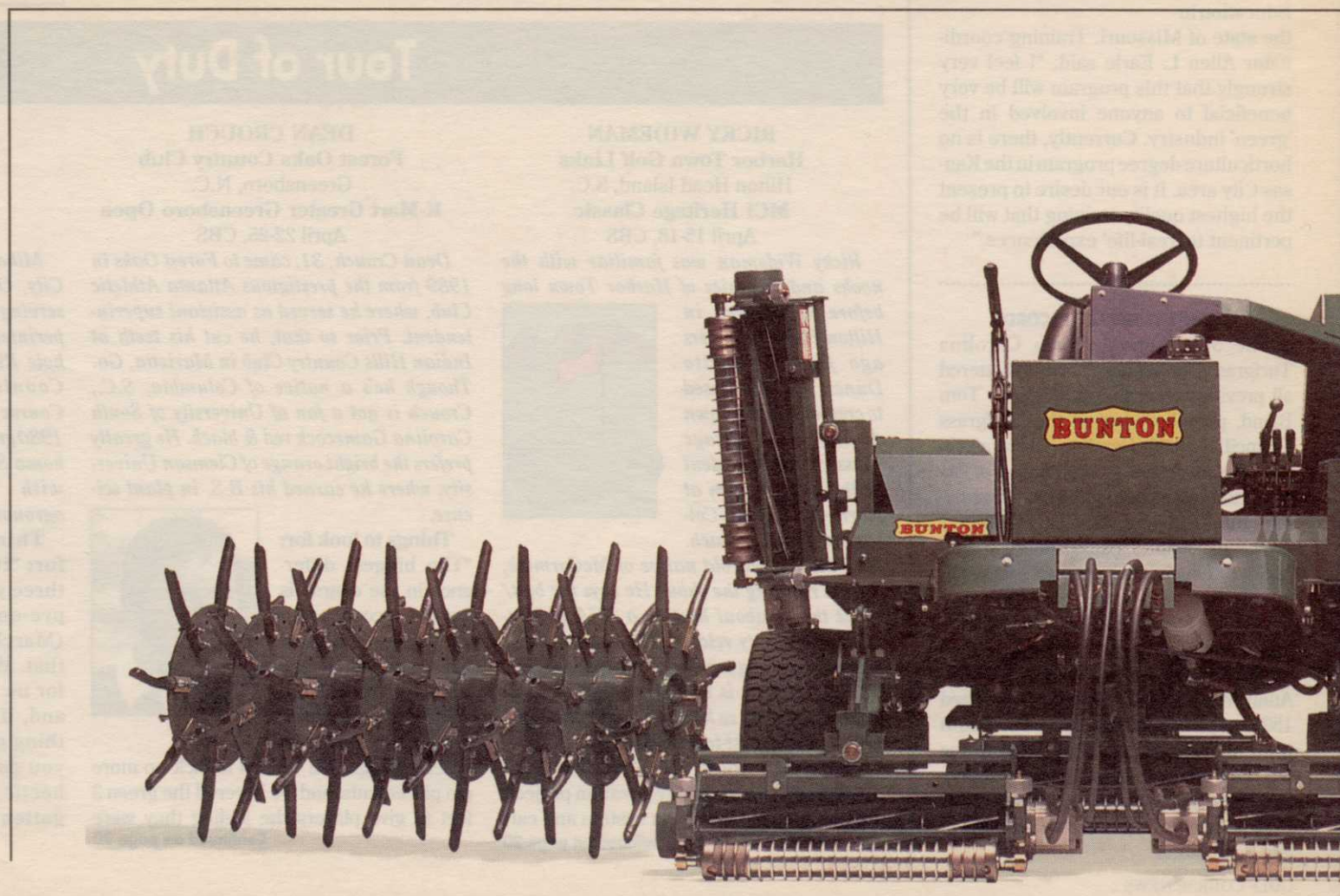
Ferguson, who has been at

Lochland for 17 years, said the course has eight American elms that have escaped Dutch elm disease. But it lost 93 Siberian elms — "a trashy tree" — a year ago, and "that left quite a void in our golf course."

He will plant the 200 trees in his

nursery and grow them for three or four years, until they are about three inches in diameter, before transplanting them to the course.

"We need them to get enough size to withstand punishment from the golf balls. Smaller trees wound up easily," Ferguson said.



Deserving two thumbs up!

Brown Deer facelift a success for Bob Stock

MILWAUKEE — Brown Deer Golf Course was once ranked among the top public facilities in the United States. Now the course is pulling out all the stops to return to its former glory.

In the late 1970s, *Golf Digest* rated Brown Deer as one of the nation's 10 best public golf courses. Unfortunately, outdated irrigation and drainage systems took their toll on the course. Fairways and greens began to deteriorate, and the course fell out of favor with local golfers.

Under the direction of superintendent Bob Stock, Brown Deer is making a comeback. New irrigation and drainage systems have led to improved turf conditions. Bentgrass fairways have replaced bluegrass.

Stock hopes these efforts will regain the course's prominence.

"Our goal is to bring the course back to what people grew to expect from its national reputation of excellent conditions," he said. "We want to get tournaments again, such as the U.S. Amateur Public Links Championship." Brown Deer was the site for the 1977 championships.

\$2 MILLION RENOVATION

Milwaukee County began its \$2 million renovation in 1987. Spurred by an analysis conducted by a course architect, the county decided to update the drainage and irrigation systems, as well as the fairways.

"We may not have used the architect's plan 100 percent, but he gave us an understanding of where golf is today and where it is going," Stock said. "His study laid the groundwork for us about what our next steps should be."

"When I arrived here in 1986, the course needed considerable up-

grading. The drainage system was nearly 60 years old, and the 40-year-old irrigation system was antiquated at best."

Stock and his crew used Band-Aid measures to keep the course going until conditions became so bad that play became impossible. Soon after Stock took over at Brown Deer, drainage heads collapsed, flooding fairways, traps and greens.

"We had a soup bowl with a 200-foot drop on one side of a creek," Stock recalls. "There was no positive drainage. Anytime it rained, there was ankle-deep water. Over 20 sandtraps had to be pumped out after each rainfall."

The county reacted to the drainage problem in 1987 by revamping the old tile drainage system. Two thousand feet of cement drain tile was installed to control overflow from rain.

Now, with a built-in, positive swale drainage system, the course drains out within an hour, Stock said.

Step two involved the irrigation system. As it was in 1987, the system could only water two greens at a time without shutting down. Eventually, the system failed completely.

The county installed a \$500,000 double-row network irrigation system that discharges 1,050 gallons of water per minute.

It also dug out a three-quarter acre irrigation pond with its own pumping station. Despite the overhaul, the classic layout of the course did not change, Stock said.

BENTGRASS CONVERSION

Stock consulted amateur and PGA professionals about converting fairways to bentgrass. He de-



Brown Deer's fairways were converted to bentgrass.

cided to make the switch.

"The bottom line is, we would never get any tournaments without bentgrass," he explained.

Once the decision was made to convert the fairways, Stock had three options:

- Slit-seed bentgrass seed and spray glyphosate, a non-selective, post-emergence herbicide on the fairways as a burn-down treatment.
- Aerify fairways two to three times a year for several years. Stock's crew would mow the grass close each year, while overseeding bentgrass.
- Continuously overseed bent.

"We decided to spray glyphosate. Over the long run, it was less expensive, took fewer man-hours and provided quicker, and better, results than the alternatives," Stock said. "One benefit with aerifying the fairways is that the course would have remained open."

Instead, Brown Deer was closed for nearly three months. Stock and his crew slit-seeded the fairways with Penn-cross bentgrass seed a day before applying glyphosate. They applied Roundup herbicide

at three quarts per acre with a 15-foot boom sprayer. The edges of greens were also treated.

"Glyphosate is really the way to go. It's a one-step process instead of waiting two to three years for overseeding," Stock said. "Ten to 14 days after application, we saw the results."

Stock has changed his maintenance program since the conversion. His crew now uses light-weight mowing equipment.

It also plans to cut the number of mowings in half.

SHORT- AND LONG-TERM

Public reaction to the renovation has been positive, despite the fact the course had to be closed.

"People were more frustrated when things weren't getting done. Overall, we're proud of what we've done and plan to keep on going to get the course back into the top 10," Stock said.

Ongoing and future projects include: adding cart paths, creating a driving range, replacing bridges, and converting tees to bentgrass, Stock added.

Research green

Continued from page 13

application rates. "We noticed some major differences at certain times of the year and almost no difference at other times," Elliott said.

• Two fungicides, mancozeb and chlorothalonil (Daconil 2787), are the most effective in controlling blue-green algae.

• The best way to control root-zone degeneration on Tifway 328, one of the older Bermudagrasses, was simply raising cutting heights from 3/16 to 1/4-inch. Fungicides and fertilizers had little effect.

Other studies underway are designed to test the effects of 1990s maintenance practices on grasses developed in the 1960s and 1970s. These include:

• Tracking pesticide movement through a USGA-spec green. Drs. George Snyder and John Cisar are concentrating on insecticides and nematocides.

• A root biostimulant study testing whether various organic fertilizers improve turf quality and increase rooting. Among the products being tested are Milorganite (composted sewer sludge); three products — Eco, Sustain and Ringer — that consist of composted organic materials such as turkey feathers and bone meal; and natural cytokinin-like materials made from sea kelp.

"Because of today's low cutting heights, we're losing grass on many greens," Elliott said. "These products could help."

Portions of the two greens have been set aside to study existing grasses as well as experimental cultivars and varieties that researchers hope "will help us find a Bermudagrass that needs no overseeding, retains its color and is tolerant of low cutting heights," Elliott added.

Eight 500-square-foot plots containing currently marketed Bermudagrass strains have been provided by sod producers in Florida and Georgia. They allow superintendents to visually compare the characteristics of today's varieties. Two more plots are planned.

Several USGA-sponsored experimental grasses and a United States Department of Agriculture-funded Tifdwarf will be sprigged into the newer green shortly after the April 1 Field Day, Elliott said.

Much of the money to maintain the research greens and pay staff is raised during the field day and exposition. The major exhibitors, Elliott said, are DeBra Turf Co., a Jacobsen distributor; Hector Turf Co., a Toro distributor; Pifer Inc.; and LESCO.

Jacobsen, Toro and John Deere have donated equipment, and the Florida GCSA and USGA have provided additional funding.

The purpose of the green is to provide a field research laboratory that simulates a Southeastern U.S. putting surface. Research will include evaluation of new products, development of new management practices and studies of the environmental impact of turf management practices.

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4601 East Indian Trail, Louisville, Kentucky 40213



CIRCLE #110

From rain gauges to reel grinding, the savvy super has helpful hints

Continued from page 13

smaller, the original size of the green can be found each spring and fall to keep the surface the size it was designed for by the golf course architect.

MOWER ROLLERS

On triplex greensmowers and five-gang fairway mowers, superintendents have been installing weihle rollers to the rear roller, instead of the usual solid roller to get a much smoother/lower cut and to lessen the bouncing of the individual mower units. This idea caught on with superintendents hosting national amateur championships and professional weekly Tour events, and it's amazing how much of a difference switching rollers does improve the angle of the bedknife deeper into the turf surface.

WALK-BEHIND GREENSMOWERS

At the advise of our local greensmower distributor, we built a walk-behind greensmower flat surface piece of steel that we lay on top of our work bench to properly align our mowers after totally replacing all bearings/seals and grinding the reels/bedknives. We called our local specialty steel company and ordered a 36-by 36-inch, quarter-inch thick piece of perfectly flat steel and had one side "blanchard" to take out any imperfections.

Two original equipment bedknife height-adjustment bars are laid end-to-end and then welded on the three sides to the steel top about 4-inches from the edge.

The greensmower is then placed on top of the steel top, fully assembled, with the front of the bedknife up against the side of the height-adjustment bar that was not welded, placing as many reel blades on top of the height adjustment bar as possible.

Now, the reel can be made perfectly parallel to the rear drive roller and then the height adjustment can be made with an Accu-Gauge, aligning the front roller with the rear drive roller, allowing the mower to then tract perfectly straight.

The piece of steel weighs about 90 pounds, so it is stable enough, will not bend whatsoever, and can be used on other areas such as a mechanics table on wheels, etc.

LOCATING THINGS UNDERGROUND

I have taken the idea of locating "stuff" underground one step further by using used railroad spikes instead of cutting up steel rebar with an acetylene torch. Used railroad spikes are readily available in most scrap steelyards, cost anywhere from 15 to 20 cents a piece, and the large head of the spike makes hammering them into the ground quite easy.

We then purchased a Schonstedt metal detector. Items we then marked include all areas of the course when we measured with a laser distomat, such as the fairway turning points, and each individual

teeing ground.

All underground irrigation equipment such as gate valves, isolation valves, wire splices, air relief valves, and quick coupler valves can be found easily if the grass grows over them.

SPRINKLER HEAD YARDAGE

We have three yardages on each of our sprinkler heads that are etched into the same size plastic tag normally used. The number in the center is largest of the three and is measured to the center of

each green. The number to the left is the measurement to the front of the green, and the number to the right is the subsequent yardage to the rear of the green.

This extra yardage data has been very popular with our members and guests and, as Tom Weiskopf says best: "The more information that you give a player, the better!"

REEL GRINDING

We purchased a diamond-tip stone dresser, which was an optional accessory for our bedknife

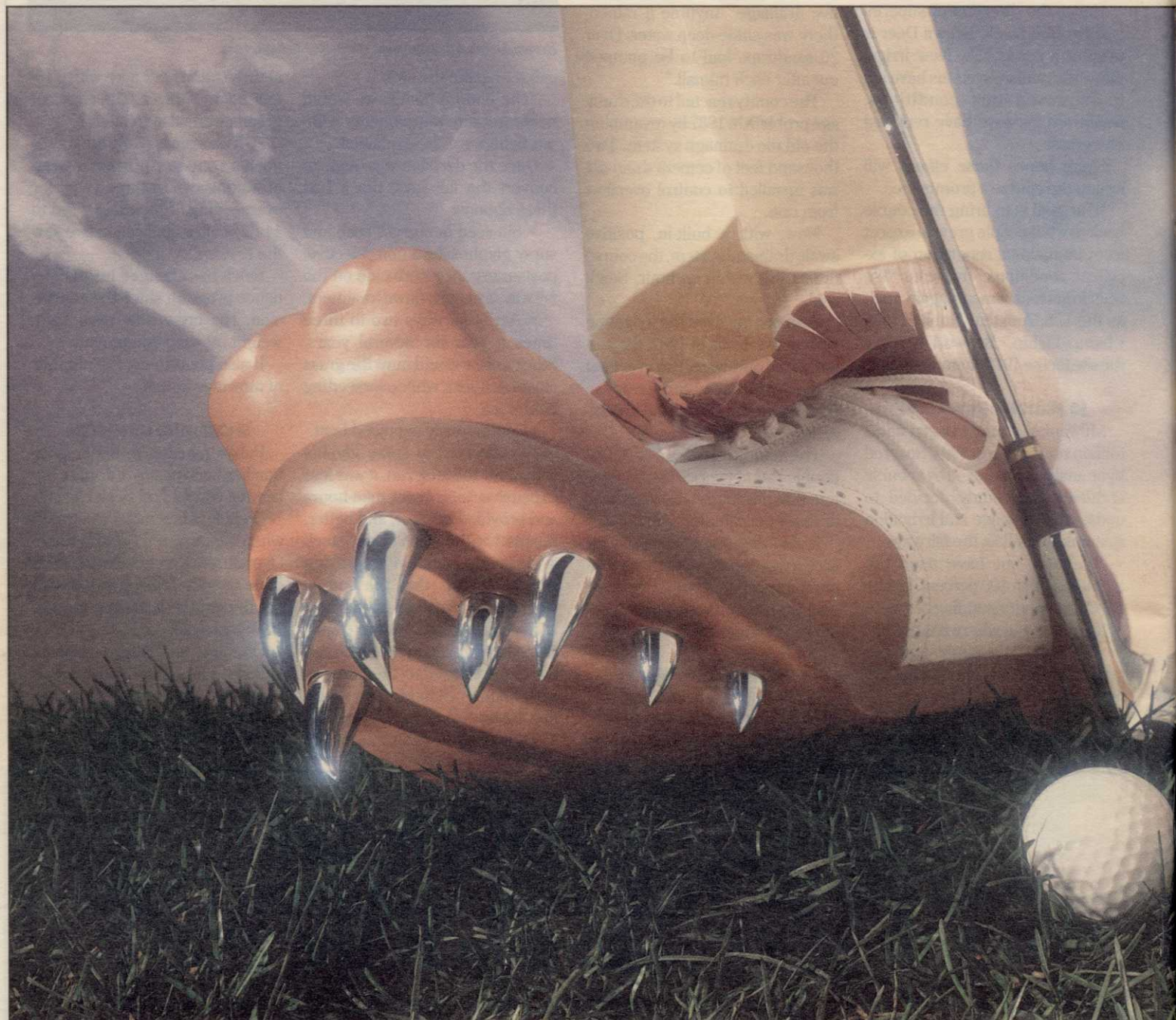
grinder, and placed it on our reel grinder instead.

The stone dresser was mounted to our automatic reel grinder on the far left-side bracket that holds the mower bottom to the grinder using a bolt already in place to secure it to the bracket.

As the reel grinder passes back and forth, each time it goes all the way to the left, it passes over the stone dresser each and every time to keep the stone perfectly dressed for a more consistent reel sharpening.

RAIN GAUGE

Tired of going outside to read how much water is in your rain gauge? I have a rain gauge "inside" my office that holds five inches worth of water in a removal glass cylinder which is mounted inside a window sill. A quarter-inch plastic hydraulic tubing runs up to the rooftop, where it attach to a collection cup-type funnel. The Rain-Minder Remote Reading Rain Gauge is available from Texas Electronics, P.O. Box 7225, Dallas, Texas 75209; telephone 214-631-2490.

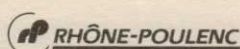


A TURF'S-EYE VIEW OF

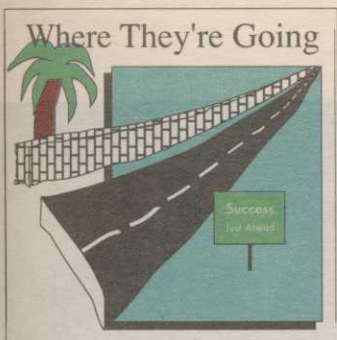
What's really frightening about this vision is that every year your turf is seeing more of them. And it's this increased traffic that's making even your hardiest varieties more vulnerable to disease damage.

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control of Helminthosporium Leaf Spot and Melting Out, Dollar Spot, Brown Patch, Fusarium Blight and Red Thread, CHIPCO® 26019 is simply the best investment you can make to ensure the quality and play-ability of all your turfgrasses. It even protects against



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The city of Massillon, Ohio, doesn't have a golf course yet. But it has a superintendent, 28-year-old **Marty Young**, who had spent the last five years at The Elms Country Club in Massillon. He's a graduate of the agronomy program at Ohio State University. Though \$2.9 million in notes have

already been issued for course construction, there's no word as to when it will begin. Until then, Young will set up shop in City Hall.

...
Paul Johnson has joined **The Meadowlands**, the Davidson County, N.C., area's newest golf course, as superintendent. The Meadowlands, a planned lifestyle community, breaks ground this spring on a Hale Irwin-designed track. Johnson served for seven years as assistant superintendent of Bermuda Run Golf Club in Advance. Prior to that, he served in the same capacity for the Myers

Park Country Club and Carmel Country Club in Charlotte. Johnson attended Michigan State University, where he received an associate degree in golf course management. The Meadowlands is scheduled to open in late 1994.

...
Mike Hamilton has been named head superintendent at **Grey Oaks Country Club**, a 1,600-acre golf community located in Naples, Fla. Hamilton comes to Grey Oaks after stints at The Harbor Club in Greensboro, Ga., Lanier Golf Club of Cummings, Ga., and Jupiter West Golf Club of Jupiter, Fla. During his stay in

Georgia, he was elected to the Georgia Golf Course Superintendents Association (GGCSA) Board of Directors. He also served as editorial chairman of the GGCSA's noted magazine, *Through the Green*. Matt Jones, former GCS at Stone Creek CC in Valdosta, Ga., has taken Hamilton's place at The Harbor Club.

...
Paloma Golf Group (PGG), has announced the hiring of **Anthony Miller** to be the golf course superintendent at PGG's next golf course acquisition. Miller, who interned at the PGG-managed Dove Canyon Country Club in

Dove Canyon, Calif., will join the Paloma team in April after graduating from Michigan State.

...
Bob Thompson, formerly the head superintendent at Stouffer's PineIsle Resort in Lake Lanier Island, Ga., has accepted the position of GCS at **Riverview Park Golf Course** in Dublin, Ga. He replaces Charles Grinstead, who retired in December.

...
Scott Young is the new head superintendent at **Palos Verdes (Calif.) Country Club**, replacing **Reed Carpenter**. Young comes to Palos Verdes from LaJolla Country Club outside San Diego. Carpenter has taken the head superintendent's job at **Ukiah Municipal** in the Northern Californian city of Ukiah.

...
Al Melcher is the new head superintendent at **Smith Center Country Club** in Smith Center, Kan. Melcher begins his duties April 1, provided the snow clears.

...
Rocky Franklin, formerly the golf course superintendent at Metropolitan Golf and Tennis Club in Decatur, Ga., has moved to **Willow Springs** in Roswell, Ga. Franklin's former assistant, David Burchett, has taken over as head superintendent at Metropolitan GC.

...
Steven Renzetti has left Burning Tree Country Club in Greenwich, Conn. He's now the head superintendent at **The Wykagyl Country Club** in New Rochelle, N.Y., site of the LPGA's JAL Big Apple Classic.

...
Assistant superintendent **Lawrence Kell** has moved from the Harbor Club in Greensboro, Ga., to **Jennings Mill Country Club** in Athens. Meanwhile, **Kyle Marshall** has completed his schooling at the University in Georgia and is now working under Randy Waldron at **The Golf Club of Georgia** in Alpharetta. Another recent graduate, Jack Thomas, is the new assistant superintendent under Mark Cagle at Ansley Golf Club in Atlanta.

...
Pete Clarno has taken over the head superintendent's position at **Gadsden (Ala.) Golf Club**. Clarno looks after 36 holes at Gadsden, which is run by Sunbelt Golf.

...
Ocilla (Ga.) Country Club has a new head superintendent. His name is **Jack Rowland**, and he comes to the land of peaches by way of Florida.

...
Brian McCinn has accepted the head superintendent's position at **Stugart (Ark.) Country Club**. He had been the assistant to Jim Miller at Newnan (Ga.) Country Club.

...
Andrew Vaughan has been named superintendent at the sports facility owned by **Bridgestone Sports USA**. Vaughan had been the GCS at Douglas (Ga.) Golf & Country Club.



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Supers receive Britain's highest int'l turf award

Two golf course superintendents traveled to Harrogate in Yorkshire, England, in January to receive from Prince Andrew, Duke of York, the highest international award of Master Greenkeeper Certificate.

William Montague, 45, of Oakwood Club in Cleveland Heights, Ohio, and Robert Maibusch, 35, of Hinsdale Golf Club in Clarendon Hills, Ill. are the first U.S. superintendents to qualify for the certificate, awarded by the British and International Golf Greenkeepers Association, of which they are members. Only three other greenkeepers, all from Britain, have qualified.

The certificate is gained by courses, experience, a written examination and independent assessment of the golf course.

"My interest in the certificate started as a personal challenge," Maibusch explained. "The work leading up to the exam forced me to go back and review everything I'd ever learned and it was very rewarding."

"The exam itself was difficult but fair. But I never realized quite what an achievement it was until everyone else recognized it and the whole thing outgrew my original personal involvement. My golf course was thrilled, and meeting the prince was overwhelming."

Maibusch, 35, a turfgrass management graduate of Michigan State University, is on the National Committee of Certification Appeals for the GCSAA.

At Hinsdale, one of the oldest clubs in Illinois, he has 18 staff in season "the best I've ever worked with" and his members are "very appreciative of what we do" and are "wonderful people

to work for."

Montague has worked at the Oakwood Club for nearly 20 years and is a certified golf course superintendent. "Having been certified by the GCSAA, I felt the need for a career-oriented educational goal and this MGC program fulfilled perfectly," he explained.

"I had an unbelievable feeling of accomplishment to be told that I was only the second Master Greenkeeper and the first international member to achieve the status."

Maibusch, and Montague with their respective wives, Cheryl and Monica, met the prince informally at a BIGGA reception after the award ceremony. All were thrilled by his friendly interest and informality.

Prince Andrew, a keen golfer and the first member of the British Royal Family for 40 years to take an interest in the game, was in Harrogate to open the fifth annual BIGGA Turf Management Exhibition and Seminar Program.

The prince told the green-keep-

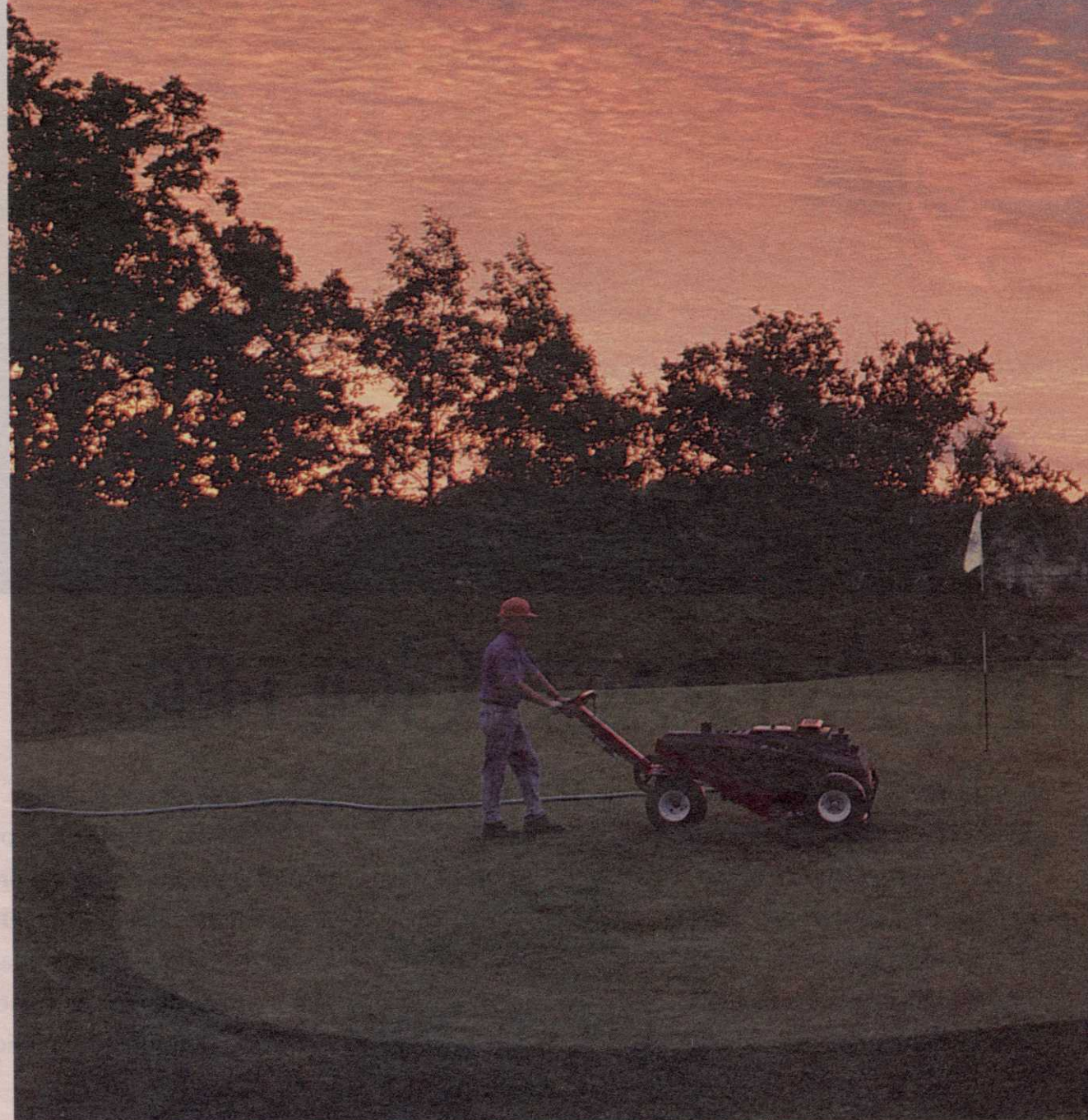
ers: "It is only possible to play this royal and ancient game because of all the hard work, commitment, patience, care, and above all because of the pride, you take in your profession."

For more information on the MGC program, contact Neil Thomas or David Golding, at the British and International Golf Greenkeepers Association, Aldwark Manor, Alne, York, YO6 2NF, England—Tel: (03473) 581. Or call Maibusch at 708-986-1323, or Montague at 216-381-7675.



Robert Maibusch receives certificate from Prince Andrew.

For those who worry about compaction so much, they lose sleep over it.



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N.C. elects officers

At the annual meeting of the Turfgrass Council of North Carolina, new officers and directors were elected to lead the 1,600-member organization during 1993-94.

TCNC President Terry Baughman announced that Tom Bland of Bland Landscaping in Raleigh will become the organization's 17th president when the gavel is passed during official ceremonies on May 12. Other officers are Gene Daniel of River Hills Country Club, vice president; and Russ Barnette of DowElanco, secretary. Charles Tomlinson, of the N.C. Department of Transportation, will continue to serve as the council's treasurer.

Four incumbent directors were re-elected to the 12-member board: Mike Claffey of Cape Fear Country Club in Wilmington; Charles Tomlinson of NC-DOT in Raleigh; Ray Avery of Quail Hollow Country Club in Charlotte; Les Kuykendall of RSI Holdings, Inc. (Formerly Porter Brothers) in Shelby; and Bob Bell of Smith Turf and Irrigation in Charlotte.

Baughman, owner of a leading Raleigh, N.C. lawn-care company, will continue to serve on the TCNC board of directors as past president.

EPA pesticide hotline cuts service

Budget cuts have forced the Environmental Protection Agency's Office of Pesticide Programs to reduce hours on its toll-free hotline (800-858-7378) for pesticide poisoning incidents and information.

The National Pesticides Telecommunications Network had been a 24-hour, seven-day-a-week operation until Feb. 1.

The new hours are 8 a.m. to 6 p.m. Central Standard Time, Monday through Friday.

Holiday service will also be cut and the number of toll-free lines reduced from six to three.

Caller requests for mailed information must be pre-paid before mailing. Faxes will be sent only to callers providing charge card numbers.

Operators will continue to answer questions about human and animal poisonings as well as related areas. Medical professionals are available in emergencies.

Prof declares: Golf courses get bad rap

COLLEGE STATION, Texas — A Texas A&M University agricultural scientist says golf courses get a bad rap, ecologically.

"It isn't really fair to look on a golf course as an ecological desert," said Dr. Robert Green, a post-doctoral researcher in Texas A&M's Department of Soil and Crop Sciences.

Golf courses do have an impact on the environment. At an average of more than 125 acres per 18-hole course, the impact is sizable. And according to the Center for Golf Course Management, course man-

agers spent about \$3.4 billion in 1991 to maintain that acreage.

Green who specializes in the study and management of turfgrasses, said golf links do more good and less harm than many persons think. For instance, the range of cultivation that goes into a typical golf course — closely manicured greens, mowed fairways, unkept roughs and bands of shrubs and trees — is a definite plus for many kinds of wildlife, he said.

"From what I can tell, there doesn't appear to be much degrada-

tion in terms of wildlife," he said. "There is a reduction in the total number of species of wildlife, but for some kinds — particularly birds — golf courses are a real plus."

Green said a study of golf courses and parks in Cincinnati found that birds like finches and sparrows benefit most from the variety of habitat found in golf courses — perhaps more than from conventional municipal parks.

In fact, the potential impact of golf courses on bird populations is large enough that the Audubon Society offers a program under which golf courses can become certified as bird sanctuaries.

And, Green said, construction of new courses is creating more new wetlands than it destroys.

"The first choice is to build the course around existing wetlands," he said. "If they have to use some of the wetland area, then they build twice as much as they took."

Even in other controversial areas, such as water use and conservation, golf courses come out on the plus side, Green said.

"People drive by golf courses and they see all the water being used, and they say, 'They're just wasting water,'" Green said.

Industry consumes about 43 percent of the water used in the United States, he said, and production agriculture uses another 47 percent. Domestic use — bathing, sanitation, drinking, watering lawns (including golf courses) — amounts to about 10 percent.

"They target golf courses when, in actuality, there are other areas that would enhance your probability of saving water," Green said. "This can be a win-win situation for everybody, but everybody has to work together to make it work"

Your worry is justified. Because compaction is a major cause of turf stress. And that can be murder on your greens. Resulting in disgruntled golfers as well as lost revenue.

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The HydroJect® 3000. Can penetrate up to 20" for improved water infiltration with additional shots.

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with the precision engineered tools you need to create a golf course of uncommon beauty and playability.

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Missouri turf service started

The Missouri Valley Turfgrass Association is working in conjunction with Barbara Corwin at the University of Missouri-Columbia to form the Turf Disease Diagnostic Service for professional turf managers across the state.

MVTA President Robert P. Deardeuff announced the program which dispatches a plant pathologist to a facility the day of or day after a phone call to the diagnostic clinic.

The pathologist will examine the turf infection firsthand and give a preliminary on-site diagnosis.

"No more packaging up samples and waiting for results," Deardeuff said. "You'll be able to take the proper corrective action immediately."

MVTA members are eligible for a \$50 credit off the \$150 service fee and discounts off lab fees.

The University of Missouri Extension's clinics in agronomy, entomology, horticulture and plant pathology are at 344 Hearn Center, Columbia, Mo. 65211; telephone 314-882-3019.

Bator to draw on past while building future as consultant

PENFIELD, N.Y. — Richard M. Bator, who has earned acclaim for his work as superintendent at Oak Hill Country Club and Pine Valley and Merion golf clubs, has opened his own consulting business.

Bator, who has also designed and built two golf courses, said he will offer expertise on conversion programs from poa annua to bentgrass; course restoration; new course construction, from pre-construction to grow-in specifications; and customized programs to fill particular needs.

"My intention is to service all ranges of

clubs, from low- to medium- and high-profile clubs, along with a special interest in public or municipal courses," Bator said. "I will also work with an architect of a new club for grow-in specifications and in preparation of operating and capital budgets for the club and future maintenance program schedules."

Bator said he expects to help especially

"private ownership clubs, mom-and-pop courses — lower-budget clubs where the superintendent needs more guidance.

"There is a big need [for consultants] at public courses, maybe moreso than at the high-profile private clubs."

Bator said he often called in other superintendents and university scientists when he

had agronomic trouble on his course. He hopes to pass along the knowledge he gained the last 25 years.

"A second set of eyes, a fresh face is very important," he said.

Bator was superintendent at Oak Hill from 1977 until moving to Pine Valley in 1983. He left in 1986 to design and build Blue Heron Hills Country Club and Gypsum Mills Country Club, then took the superintendent post at Merion in 1989.

Bator is located at 210 Willow Pond Way, Penfield, N.Y. 14526; telephone 716-377-3026.

Tour of Duty

Continued from page 13

Wideman

paths. The new irrigation system [Network 8000 from Toro] is working out great. We always had a center-line system that didn't get the rough. Now we go treeline to treeline.

"We also have the traditional Harbor Town striping. The same guy has done it for years. Our fairways are very wet so I went to the lightweight mowers last year. It's really helped... Extra mowing is the biggest thing we do. It goes from once or twice a week to everything every day. We have small greens here and our green-side slopes, up until last year, were pretty long. Now we mow 'em tight so the ball rolls away from the green."

Made-for-TV preparations: "The old cart paths were 25 to 30 years old and pretty beat up. We tried to keep the new ones out of sight of TV, but most of them don't come into play on the TV holes anyway... On our 14th hole — a par 3 over water — we always have nursery-grown azaleas. We bring them in on Wednesday night before the pro-am day. We have a lot of azaleas growing naturally on the course, but they're never in bloom during the tournament."

Crouch

hitting down to the green. You couldn't see the whole putting surface before. We also wanted to create more spectator mounding. Eventually we'll be doing the same sort of renovation on most of the greens here.

"We also redid the bunkers around 18. We have steep, sand-faced bunkers here. They look great, but we decided to flatten them out and grass the faces. The wash down is awful with the steep faces and it hurts the consistency of the sand, which is one of our biggest complaints. Eventually, we'll be redoing all of the bunkers like this."

Made-for-TV preparations: "Our course changes a great deal for the tournament. When people see it on TV, it's not what's here most of the year. Because we play on overseeded ryegrass, we have 4- to 6-inch rough, U.S. Open-type rough. We also use lightweight fairway mowers for striping.

"We're actually fortunate with the weather because our tournament got moved. We used to be the week before the Masters. Now we're two weeks after, which means much better weather. But the new schedule does mess up our aerifying schedule."

Link

well."

Made-for-TV preparations: "I try to establish my mowing patterns early, about the middle of March, well in advance of the tournament. If you establish different cuts early — like with the intermediate rough — the distinction is really there for TV. On the par-3 16th, during tournament week, I mow with a triplex in the direction of the camera, which is set up right behind the green. That way the TV really picks up the striping effect.

"We also add sand to the bunkers in December, so it will have time to firm up. We don't do a whole lot of extra landscaping [for the tournament] because the motif here at the Woodlands is very natural. But the Shell people put some flowers around the 14th tee box in the shape of a big shell."

Editor's note: "Tour of Duty" is a regular feature this year in Golf Course News. It is designed to celebrate the PGA Tour's unsung, underpublicized hero: The superintendent.

What You See.



Photography location courtesy of Marriot's Marco Island Resort and Golf Club.

Katterheinrich must wait awhile to relax

By HAL PHILLIPS

In late August of this year, the pressure will finally be off John Katterheinrich, head superintendent at venerable Interlachen Golf Club in the Minneapolis suburb of Edina.

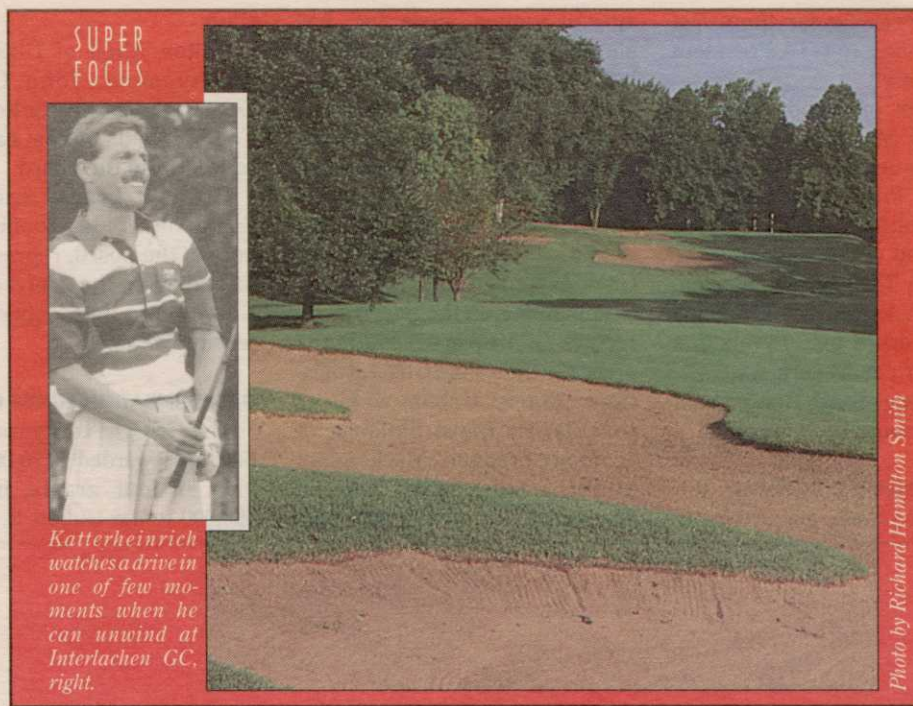
By Aug. 20, the top female amateur players in the world will have come and gone, as the Walker Cup will be held at Interlachen from Aug. 17-19. Coincidentally, Aug. 20 will also mark the end of Minnesota's toughest weather period, when soaring temperatures subject golf courses to intense disease pressure.

Then there's the pressure of hosting your first big event, a U.S.G.A. event for that matter.

"The tournament comes at the toughest time of year for us, that six-week stress period from July to the middle of August," Katterheinrich explained. "At the end of those six weeks, we could potentially look our worst. We're hoping for a year like the last one, when it was pretty cool all summer."

...

Interlachen is a Donald Ross design, built in 1911. All the greens are original and Katterheinrich hasn't done anything specific in preparation for the 1993 Walker Cup. Instead, renovations — mostly bunker work — have taken place over an



Katterheinrich watches a drive in one of few moments when he can unwind at Interlachen GC, right.

extended period of time.

Almost every trap on the course has been rebuilt to the original specifications. Architects Geoffrey Cornish and Brian Silva handled some of the work, but most was carried out by Katterheinrich's crew of 30.

"Interlachen has got to be one of the most photographed golf courses in the country," said Katterheinrich, who noted that many of the shots were taken during the 1930 U.S. Open, won by then-media darling Bobby Jones. "So by looking at all the old photos, you can see exactly how the bunkers looked back then."

"You'd be amazed at how much they've

changed. From years of trap edging they lose their original shape. The grass fingers get a lot smaller. Over time, a bunker can become one half the size it was designed to be.

"By using a soil probe you can tell where the original depth is. Some of these bunkers had three or four extra feet of sand in them. Basically, what we did was restore the original capes and bays, then shelled them out a bit."

The members at Interlachen have spent the last 15 years restoring different aspects of the course. The result was a resounding thumbs up from U.S.G.A. officials.

"We haven't changed a thing for the Walker Cup," said Katterheinrich. "The U.S.G.A. liked it just the way it is."

...

Katterheinrich came to Interlachen in 1990. He arrived by way of Lost Tree Country Club in North Palm Beach, Fla., where he was head superintendent for seven years. With input from members like Jack Nicklaus, he was involved in numerous renovation projects at Lost Tree, which helped him when he came north.

Not many would understand a move from sunny Florida to Edina, Minn., where snow falls by the foot and courses don't open until April 1. But it was a natural for Katterheinrich.

"I was born in Minnesota and still have family here," he explains.

He moved to the Dayton, Ohio area as a boy and matriculated to Ohio State University, where he earned his degree in turf management in 1980. After 10 years in Florida, he's back in the north country preparing for his first big tournament.

The first test will come in early July.

"I just spoke yesterday to a guy from ABC who's going to do the aerial shots of each hole in July," said Katterheinrich. "So I will probably stripe the fairways specifically for that photo session."

So if you're looking for signs of late-summer course stress, compare the aerial photos with ESPN's live shots from Interlachen.

If you're looking for signs of late-summer superintendent stress, talk to Katterheinrich on Aug. 17, then call him back on Aug. 20, when the pressures are off.

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Southeast

NEW GEORGIA LEADER NAMED

The Georgia Turfgrass Association and Georgia Turfgrass Foundation Trust have hired Douglas K. Moody as executive director of both organizations.

The groups will expand their size and scope of services under Moody, who work



on fund-raising for them last fall, according to GTA President Joe O'Donnell.

President of Moody Management and Marketing Services, Moody was deputy executive director for the Professional Lawn Care Association for six years and was a director and vice president of the New Jersey Turfgrass Foundation. He holds a degree in wildlife biology and worked for 10 years in a New Jersey county park system.

He replaces Sarah Bundschuh, who is pursuing her education.

GTA ELECTS O'DONNELL

Joe O'Donnell, general man-

ager of Sunbelt Seeds, Inc., has succeeded Richard Bare of Arbor-Nomics as president of the Georgia Turfgrass Association.

Mark Esoda of Atlanta Country Club was elected vice president, while treasurer is Ken Morrow of Sod Atlanta and secretary is Mark Prinster of Tru-Green/ChemLawn Services.

Remaining on the board as directors for 1993 are Steve Mona of the Georgia State Golf Association, Mark Urbanowski of DowElanco, David Skillman of Turf Care Products, Mark Hoban of The Standard Club and Bill Womac of Dunwoody Country

Club.

Milton Abell of Classic Golf Management, John Gayle of Gwinnett County Schools and Todd Tibbetts of Post Landscape retired from the board.

Drs. Gil Landry and Albert Smith will serve as ex-officio members of the board, representing a liaison with the University of Georgia and the Cooperative Extension Service.

GA. FOUNDATION FUNDS RESEARCH

The Georgia Turfgrass Foundation has awarded \$120,000 in the form of four grants, including \$90,000 to the Hubert E. Frenette

Endowment Fund to study creeping bentgrass cultivars under poor air movement.

The GTF gave Dr. Lee Burpe a two-year grant to study the effects of mowing heights and nitrogen fertility on the severity of brown patch on tall fescue.

Dr. Ron Duncan will begin a breeding program of seashore paspalum for use on golf courses. He hopes to improve winter hardiness and develop management standards to effectively use the grass as a substitute for hybrid Bermudagrasses.

Dr. Wayne Hanna will conduct a three-year breeding and evaluation program on triploid Bermudagrass hybrids, emphasizing pest resistance and drought tolerance.

SHEETS, FABRIZIO RE-ELECTED

CLEMSON, S.C. — T. Stephen Sheets of Linville Ridge Country Club in Linville, N.C., and Michael K. Fabrizio of Wild Dunes Resort in Isle of Palms S.C. were re-elected president and vice president of the Carolinas Golf Course Superintendents Association.

Also re-elected were Robert O. Farren of Pinehurst N.C. Country Club, and Charles Green III, Florence Country Club, Florence S.C., as treasurer and secretary, respectively.

Directors are John A. Gay of Forest Lake Club and Billy J. Ford of Northwoods Golf Club in Columbia S.C.; Dave W. Powell of Myers Park Country Club in Charlotte N.C.; John K. Williams of Keith Hills Country Club in Buies Creek N.C.; Donald C. Garrett Jr. of Dataw Island Club in Dataw S.C.

Also, Gary H. Jones of Verdae Greens Golf Club in Greenville S.C.; Kris W. Spence of Greensboro (N.C.) Country Club; and F. Maxton Bowden of Cleveland Country Club in Shelby, N.C.

Frederick S. Biggers of Greenville (S.C.) Country Club remains on the board of directors as past president.

West

ORE. BACK ON 'STRAIGHT' GAS

The Oregon Department of Environmental Quality (DEQ) has discontinued its oxygenated fuel program for the season.

During winter months, the Portland Tri-County area, Yamhill and Jackson counties, Grants Pass and Klamath Falls used gasoline with added oxygen to make it burn more efficiently.

These areas do not meet federal health standards for carbon monoxide pollution.

The DEQ discontinues the program during the spring and summer months because there is some indication that in warmer weather, ethanol contributes to the creation of ground-level ozone, or smog.



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Leaf spot

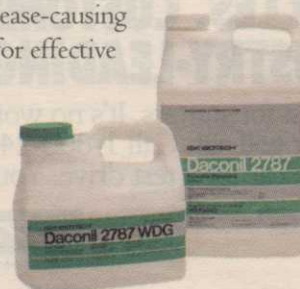
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North Central



BEITING IS CINCINNATI PRESIDENT

Mark Beiting of Cincinnati Country Club has been elected president of the Greater Cincinnati Golf Course Superintendents Association.

Beiting's colleagues in leadership are Vice President Marcus Lacinak of Kenwood Country Club, Secretary-Treasurer Charlie Tadge of Vineyards Golf Club and Trustee Mark Skeen of Royal Oak Country Club.

BREEDLOVE, STUNTZ HONORED

The Heart of America Golf Course Superintendents Association (HAGCSA) recently honored Loren Breedlove of Kansas City Country Club in Mission Hills, and Dick Stuntz of Alvarado Country Club in Lawrence, Kan., at its holiday party.

Breedlove received the Superintendent of the Year award. Superintendent of Kansas City CC since 1985, he is host superintendent to a variety of tournaments every year. This year he will host the Trans-Mississippi Amateur, the biggest amateur tournament west of the Mississippi.

He served as HAGCSA vice president in 1990, president 1991, and director in 1992. He also served as president of the Kansas Turfgrass Foundation in 1992. A 1979 Kansas State graduate, he lives in Olathe with his wife, Barbie.

Stuntz received the Chester Mendenhall Award, given to a superintendent for years of outstanding service to golf. A 1976 agronomy graduate of Iowa University, he began his career at Ames (Iowa) Country Club in 1977. He moved to Alvarado in 1983. Alvarado ranks in Golf Digest Top 75 Public Golf Courses, and hosts the Kansas Amateur Open.

The reigning GCSAA Tournament champion, Stuntz has been a member of the HAGCSA for 10 years and served two years as a director. He lives in Lawrence with his wife, Kathy.

South Central



SOUTHERN CONCLAVE SET

BILOXI, Miss. — Environmental regulations, pollution prevention, recycling, hazardous waste and similar topics will garner attention at the Southern States Annual Environmental Conference at the Mississippi Coast Coliseum and Conven-

tion Center here, Oct. 26-28.

Mississippi State University is coordinating the program, which is being hosted by the U.S. Department of Defense (DOD), federal Environmental Protection Agency, Mississippi Department of Environmental Quality and the states of Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, North Carolina, Oklahoma, South Carolina, Tennessee and Texas.

More information is available from Mississippi State University, Department of Chemical Engineering, P.O. Drawer CN, Mississippi State, Miss. 39762-5618.

Northeast

NE SUPERS PRESENT SCHOLARSHIPS

The Golf Course Superintendents Association of New England has awarded 14 Troll/Dickinson Scholarships worth \$10,500.

Presented at the Massachusetts Turf Conference, \$1,000 scholarships were given to Massachusetts residents Richard H. Gniadek of Pittsfield; Paul C. Hallock of

Marlboro; William B. Leger of Southbridge; Michael Luccini of Franklin; Jonathan Miller of Marblehead; Dennis O'Kane; and Robert Varanka of Springfield.

The \$500 scholarships were presented to Jonathan Zuk of Unionville, Conn., and Massachusetts residents Louis Peter Bettencourt of Westport, Mark Daly of Boston, Robert Hartley III of South Hadley, Norman Raymond Lafaille of Spencer, Peter Nystrom of Sandwich and Robert S. Reichert of South Deerfield.

PIERSON IS SUPER OF THE YEAR

Peter Pierson of Pequabuck Golf

Club in Bristol, Conn., was named 1992 Connecticut Association of Golf Course Superintendents Superintendent of the Year.

Pierson received his bachelor's degree in horticulture from Clemson University in 1966. He joined the CAGCS and GCSAA in 1978 and took over as the superintendent at Edgewood Golf Club in Cromwell, Conn., in 1984. Edgewood became the Tournament Players Club site of the Greater Hartford Open. In 1986 he took on his current position.

He has been active in the CAGCS and GCSAA and has served many terms on the CAGCS board.



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	Carryall II	Gas	9	16	4	8.5	120	111
Columbia ParCar 350 N. Dewey Ave. P.O. Box 30 Reedsburg, WI 53959 Sue White 608-524-8888 Circle No. 202	Utilititruck (GU4)	Gas	8	15	4	8.5	216	105
	EU 2000XB	Electric	3.2	15	4	8	240	125
Deere & Co. John Deere Rd Moline, IL 61265 Clair Peterson 309-765-4212 Circle No. 203	Gator 4x2/6x4	Gas	10/18	15.5	4/6	N/A	132/148	100.2/104.5
	1800 Utility Vehicle	Gas	18	11.5	4	N/A	120.5	102
E-Z-GO Textron Box 388 Augusta, GA 30913 Ronald Skenes 706-798-4311 Circle No. 204	Tuff 1	Gas	8.5	15	4	8	119	106
	GXT-1500	Gas	20	24	3	8	124	124
Jacobsen Division of Textron 1721 Packard Ave. Racine, WI 53403 Jim Byrnes 414-637-6711 Circle No. 205	2015/2315	Gas/Diesel	20/24	24	3	N/A	36	116
	810 Express	Gas	8.5	15	4	Front 33.5/Rear 39	44.5	106
Kawasaki Motors Corp. USA 9950 Jeronimo Rd. Irvine, CA 98718 John Baker 714-770-0400 Ext. 2203 Circle No. 206	Mule 500	Gas	10	20	4	Front 9/11 Rear	120	98.4
	Mule 2520	Gas	20	15	4	11	134	112
Melex USA Inc. 1221 Front St. Raleigh, N.C. 27609 Bryan Taylor 800-334-8665 Circle No. 207	Model 512E	Electric	2	15	4	8	220	100
	Model 252	Electric	2	15	4	8	221	106
Mitsubishi Motor Sales of America 6400 Katella Ave. Cypress, CA 90630-0064 Robert Hertel 800-366-6487 Circle No. 208	Mighty Mits — 2WD w/Doors	Gas or LPG	30	25	4	8	150	126
	Mighty Mits — 4WD w/Doors	Gas or LPG	30	25	4	8.5	150	126
Ransomes America 7900 West 78th St., Ste 105 Minneapolis, MN 55439 Paul Pesci 800-228-4444 Circle No. 209	Cushman Super Runabout	Gas	27	20	4	Rear 8.5/Front 9.5	144	113
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Smithco Inc. 11 West Ave. Wayne, PA 19087 Don Smith 215-688-4009 Circle No. 210	Red Rider	Gas	8	12	3	9.5	N/A	102
	Bandit	Gas	23	16	4	12	124	129
The Toro Co. 8111 Lyndale Road Bloomington, MN 55420-1196 Dennis Brown 612-887-8805 Circle No. 211	Workman 3200	Gas	27	27	4	10.5 std/13 opt	N/A	124.5/127 (bed
	Workman 3300-D	Diesel	21	27	4	10.5 std/13 opt	N/A	124.5/127 (bed
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44.25	1,250	20.5	2,000	N/A	4	Int'l	\$6,982
59.8	800/1,015	10.1/11.2	500/800	750/1,200	6.7	Int'l	\$4,999/6,599
66	1,141	13.9	1,600	N/A	7.3	Int'l	N/A
48	895	12.25	1,000	3,600	5	Int'l	N/A
61.5	1,400	19	1,500	8,400	4.75	Int'l	N/A
60	1,454/1,630	16.6	1,500	N/A	15	Int'l	N/A
48	940	12.2	1,000	N/A	5	Int'l	N/A
49.6	719	9	662	900	6.3	Nat'l	N/A
57.5	1,104	13.3	1,200	1,200	6.7	Nat'l	N/A
48	609	N/A	350	2,000	4.5	Nat'l	\$3,900
52	695	N/A	350	2,000	4	Nat'l	\$3,700
60	1,411	N/A	1,676	1,500	5	Nat'l	\$8,319
60	1,566	N/A	1,521	1,500	6	Nat'l	\$9,506
55	1,200	26.6	2,000	N/A	6.6	Int'l	N/A
63.6	975/1,330	17.3	2,500/2,600	936	6.6	Int'l	N/A
60	700	23	1,000	N/A	6	Int'l	\$4,000
55	1,560	N/A	1,500	N/A	12	Int'l	\$12,000
58	1,400	20	2,600	1,500	7	Int'l	N/A
58	1,400	20	2,600	1,500	7	Int'l	N/A
44.8	868	14.5	1,000	150	5.3	Int'l	\$4,995

Superintendents seek proper mix of various utility vehicles at nation's golf facilities

Course managers re-evaluating needs concerning heavy and light-duty vehicles

By PETER BLAIS

An adjustment is taking place in the utility vehicle market as superintendents seek the proper mix of heavy-duty, light-duty and modified golf car vehicles that will meet the maintenance needs at their particular courses.

"Customers are reevaluating their needs relative to those three categories," said Steve Yoltz, director of marketing with Ransomes America Corp. "More changes are coming in the mix."

The Cushman Turf Truckster, a Ransomes product, is generally considered the forerunner of most heavy-duty utility vehicles. It has been on the market since 1964. Over the years it has evolved into a versatile product with many attachments — sprayers, aerators, core harvesters, etc.

"Customers continue to be more demanding of their utility vehicles. We've tried to make ours more versatile, with better performance and reliability...We increased the payload capacity and beefed up the braking system of the Truckster this year," Yoltz said.

Toro entered the heavy-duty market recently with its Workman 3200. It has topdresser, sprayer, spreader, lift and other attachments.

"The Cushman Turf Truckster evolved into a heavy-duty vehicle. We saw a need for a new machine that was designed from the start as a heavy-duty vehicle," said Toro Marketing Manager Rick Cairns.

Cairns sees a "real polarization" in the utility vehicle market with some companies concentrating in the heavy-duty arena, some in the lightweight market and others in both.

Club Car has placed its stock in the light-duty market. The Carryall I and Carryall II have been very well received by golf course superin-

'Customers continue to be more demanding of their utility vehicles.'

— Ransome's Steve Yoltz

tendents, according to Marketing Director Mike Alexander.

Carrying two people and from 800 to 1,200 pounds, they are among a number of general-purpose vehicles designed to move people and haul a considerable amount of equipment. Like most utility vehicles, equipment can be stowed in flat or boxed cargo beds and/or hauled behind with a trailer hitch.

Deere & Co. introduced a new, light-duty vehicle at the recent International Golf Conference and Show in Anaheim, Calif. The Gator is designed to be stable and quiet, yet big enough to carry up to 800 pounds and tow another 1,200. Hydraulic lift and sprayer attachments are also available.

"Affordability is important, too," said Deere spokesman Clair Peterson, noting the \$4,999 price tag for the Gator 4 x 2.

Versatility in its light-duty vehicles is also important at E-Z-GO. The Augusta, Ga.-based company introduced its Tuff 1 Series last fall, adding a dump bed that allows the lighter weight vehicle to perform more duties around the golf course. It has a payload capacity of 1,000 pounds and can tow another 3,600.

"Superintendents want a vehicle that can perform lots and lots of different functions. That's why we make our products as versatile as possible," said Ronald Skenes.

While no two courses may have exactly the same number and types of utility vehicles, Alexander said well-stocked facilities generally have two to three heavy-duty work trucks, four to six light-duty vehicles and one to three modified golf cars in their service fleet.

Electric vehicles make up a small (Alexander estimates 5 percent) portion of the utility market. While electrics have as much power as gas vehicles, their range is limited by how long they can hold a charge, often limiting their usefulness, the Club Car executive added.

Many companies have started offering leasing plans rather than requiring superintendents to buy their fleets.

"Leasing allows courses to preserve capital and update their equipment more often. All the major companies provide some type of leasing program now," Yoltz noted.

Tournament preparation carries many and varied guidelines

Editor's note: This is the last of a three-part series on preparing a golf course for a PGA Tour tournament — guidelines applicable for any tournament event.

The purpose of these Tour conditioning guidelines is to assist the golf course superintendent and the sponsors in providing a golf course that tests the players' skill, is fair to all contestants, and one that has consistent playing conditions in all areas of the course.

The following guidelines cannot apply to all courses because of grass types, de-

sign and the time of year certain events are played.

Yet, since players of all caliber enjoy and benefit from playing under tournament conditions, it is recommended that the following guidelines be adhered to as much as possible during the rest of the year as well as during the event. Some changes will of course be necessary because of weather and membership demands, but usually when this is done, the membership enjoys the improved playability of the course. Maintaining near tournament conditions also makes preparation for the following

year's event much easier.

ROUGH

Rough mowing heights are usually between 2 and 4 inches depending on the difficulty of the course, turf type and overall turf density. Every effort must be made to provide a consistent rough quality throughout the entire golf course. This may require selective fertilization, supplemental irrigation and interseeding to improve turf coverage. Since there is a tendency for rough nearer the fairway to become more dense because of the over-

lap of fairway irrigation and fertilizer, it is important as far as fairness to the contestants that shots hit deeper into the rough are not penalized less than those that just miss the fairway. In most cases the rough collar cut at 1-1/4 or 1-1/2 inches will compensate for the potential inequity. If not, the rough collar should be expanded in width in certain areas. This plus rough mowing heights will be discussed during the Agronomy advance visit.

GENERAL

Other factors to be remembered in the tournament preparation include:

- Adequate mowing equipment and personnel to completely prepare the course for daily play, keeping in mind that weather can reduce the time for this to be successfully accomplished before play begins.
- A 5- to 6-foot-wide walkway is to be provided from teeing grounds to fairways.
- Fairway divots need to be filled before and during the tournament. Avoid using 100% sand.
- Bunkers should be raked by hand and efforts made to maintain constant sand depths. Large fairway bunkers may be raked mechanically if necessary.
- If needed, apply wetting agents and mechanically tamp bunkers to provide a firm surface where balls will not plug.
- Review the previous year's tournament critique and pay special attention to correcting all negative comments.
- Have at least 12 roller base squeegees in good working condition on hand in case of rain.
- If the tournament is televised, purchase a "hole in white" applicator and enough paint to paint cups.
- Make sure that there are Accuform rakes at all bunkers.
- Make certain that all vehicles connected with the tournament (concessions, TV, etc.) receive approval from the course superintendent, on routes to be taken to their destinations. This is especially important if wet conditions are present.
- Refer to agronomy visit checklist during the preparation process.

In conclusion, the trend in Tour conditioning is away from standardization of playing conditions and towards a program of treating each course on an individual basis. This will protect the design intent and allow the course set-up to take advantage of each course's strong points.

Environmental awareness boosted in Kansas

The Kansas Department of Health and Environment (KDHE) is revitalizing the Environment Awareness Council to provide organizations an opportunity to offer the department input regarding environmental interests and concerns.

"The Environment Awareness Council will provide an opportunity for informal discussion of environmental issues, problems, and concerns between government and its constituents," KDHE Secretary Robert C. Harder said. "The meetings will hopefully result in better policy decisions and more informed citizens."

The council will meet quarterly. The next quarterly meeting will be held Friday, June 11.

Interested organizations must register with KDHE by calling Shari L. Wilson at 913-296-0669.



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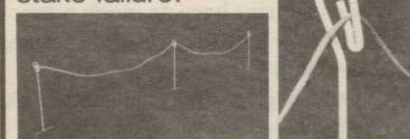
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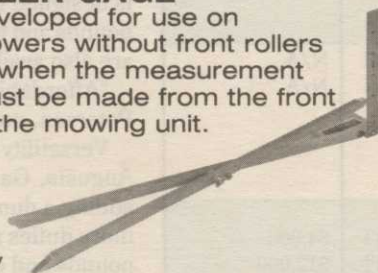
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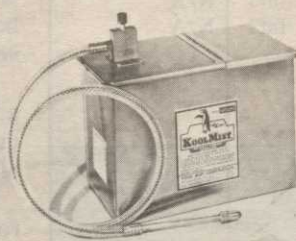
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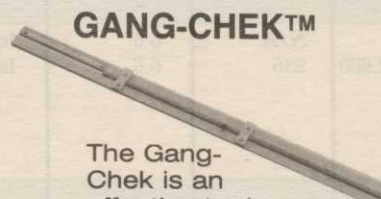


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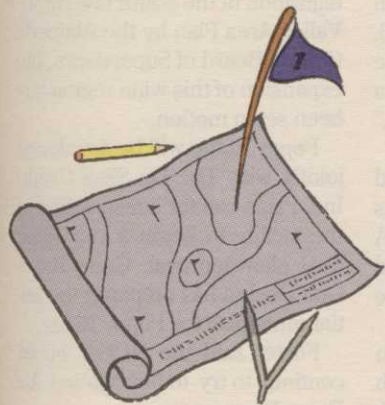
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CIRCLE #117

BRIEFS

**INDUSTRIAL PARK PROTOTYPE PROCEEDS**

PEACHTREE CITY, Ga. — Several industrial parks built within golf courses are planned by Peachtree City Development Corp. PCDC is building its prototype, an upscale business park for high-tech companies in this community 30 miles south of Atlanta. The 125-acre Southpark International will be ringed by the first nine holes of the new Planterra Ridge Golf Course. Business sites from two to 35 acres will have frontage on the course. A country club, including swimming pool, tennis courts and restaurant, also will be located within Southpark. Southpark is designed for light manufacturing and research and development companies and distribution facilities.

REC DEVELOPMENT EXPANDS

NORCROSS, Ga. — Recreational Development Consultants Ltd. of Easton, Md., has opened a new office here. Recreational Development's Bob Rauch, who designed Tour 18 in Houston, has hired Richard Mandell to man the Georgia office. A golf course architect, Mandell worked with Dan Maples in 1990 and 1991 and for Denis Griffiths in 1992. A Rye, N.Y., native, Mandell earned a bachelor's degree in landscape architecture from the University of Georgia in 1990. The new office is located at 1405 Tree Corners Parkway.

OAK GROVE ISLAND CLUB PROGRESSES

Golf course construction is underway at the Oak Grove Island Club in Brunswick, Ga. Designed by Mike Young Designs of Watkinsville, Ga., the new 18-hole, par-72 layout is expected to open in September. Upon completion, the 7000-yard, daily-fee course will offer golfers outstanding views of the marsh areas surrounding the site. The course is being built in conjunction with a 500-acre development that will feature single-family homes.

NO MORE MONTHLY COURSE LISTS

Golf Course News will no longer publish its monthly list of newly planned and newly approved golf courses in the United States. Those lists — which have been run in *GCN* for four years — are a centerpiece of the publication's new *Golf Course News Development Letter*, which began in January. The bi-weekly newsletter is available for a \$195-per-year subscription. The course lists will be run in the newspaper on occasion.

Test green? Schreiner's gone 17 better

By MARK LESLIE

For a meager \$15,000 the Clay County Parks Department has ensured it can monitor and, if necessary, treat water exiting the greens on its new golf course in Smithville, Mo.

"This will be included in every course I design," said Outlaw Golf Course architect Craig Schreiner of Kansas City. "I think you will see a trend start here."

The Outlaw, which will be grassed this spring, could be the supreme test, sitting on the edge of the 7,000-acre Smithville Reservoir, which provides the domestic water for Kansas City and northern suburbs.

Part and parcel of Schreiner's design is

an infrastructure to collect leachate from the greens. Collection mains beneath the greens route leachate through a four-inch drain tile and into the top of the 48-cubic-foot collection basins — simply prefabricated manholes. Leachate will flow into the basins, then through reactivated Grade C carbon before flowing through an exit pipe out into the reservoir. The manufacturer of the carbon will pick it up and reprocess it once it has reached its capacity — "probably no more than every five years," Schreiner said.

"We hope to prove that water exiting through the greens and draining into the local streams and lakes is cleaner than the irrigation water we use," Schreiner said.

"I'm convinced the sand and turfgrass do an incredible amount of cleansing, tying up much more of the chemicals than people perceive. And the carbon should be able to clean any nitrates and potash that do work through. Phosphorus will have to be cleaned with alum, if the concentration is high enough."

Schreiner bases his beliefs on studies done by Dr. Thomas Watschke at Penn State, Dr. Richard Cooper at the University of Massachusetts and others, as well as two years of similar tests performed on a green at Baker National Golf Course in Medina, Minn.

At Baker National — a course designed
Continued on page 40

Palmer track a lesson in history

SPRING ISLAND, S.C. — Archaeological as well as wetlands preservation played a key role in a new Arnold Palmer- and Ed Seay-designed golf course here — Old Tabby Golf Links.

On the east side of the 3,000-acre island, just beyond the 18th fairway, lie the tabby ruins of the Edwards Plantation Mansion.

Thus the name Old Tabby, and the high interest of the South Carolina Institute of Archives and History, which worked with Palmer Course Design Co., engineers and Spring Island Development Co.

The late-18th century ruins are from a cotton plantation — some of whose structures were constructed

of "tabby," a mortar consisting of shells, clays and other natural materials on the island.

The Edwards Mansion adjoins the 9th and 18th holes.

Keeping the theme, tabby retaining walls were built throughout the course, including one that encircles the island green of the 370-yard 15th hole.



Old Tabby Golf Links' 17th hole is flanked by a lagoon to the left, marshland to the right and the Chechessee River behind the green. The 197-yard gem — part of a development on Spring Island, S.C. — was designed by Arnold Palmer and Ed Seay.
Photo courtesy of Palmer Course Design Co.

Also throughout the property are ponds fed by freshwater springs, marshes, rivers and creeks. One-third of the island is being set aside as a nature preserve.

The end result is one that makes Palmer and Seay exuberant about the quality of course they have designed for the Ridgeland development firm.

Fairways wind through old hunting fields, past golden marsh and along a forest of 300-year-old oaks.

A 500-home development is planned for the island, with amenities including bridle paths, trap an skeet shooting and boating facilities.

The course is expected to open April 19.

Former Soviet Union explores new frontier: Tourism

By MARK LESLIE

POC'ET, Far East Territory, Russia — American and Russian developers expect to build a major destination resort, The Peninsula, boasting six to eight golf courses on a peninsula south of Vladivostok on the Sea of Japan.

The American firm Golf Management International (GMI) is forming the joint venture with Dalso, a government consortium appointed to develop the 8,000-acre piece of land which sits on the seven by 2-1/2-mile peninsula.

American golf course architects Jack Snyder and Forrest Richardson of Phoenix, Arizona, will design several of the courses and Frank Lloyd Wright under study Vernon Swaback of Scottsdale, Arizona, is the land planner.

"The Far East will become the gateway to Russia. And they want

Joint venture would create multi-course vacation spot south of Vladivostok



to make this their creme-de-la-creme destination resort," GMI Vice President Turner Reaney said from his Arizona Biltmore Country Club headquarters in Phoenix, Arizona, U.S.A.

The Peninsula will be built with Western technology but a Russian flair, said Richardson.

A small airport will be built on land near the peninsula — just a one-hour flight from Tokyo and two hours from Korea, Reaney said. He added that Alaska Airlines expects to begin twice-weekly service to Vladivostok in June. Aeroflot is the only other airline with flights to the airport now, but developers hope Japan Air Lines and Korea Air enter the marketplace later.

"It's an amazing project,"

Continued on page 28

Russian course

Continued from page 27

said Snyder, because of the property it sits on, because it is in Asiatic Russia, where golf is an unknown commodity, and because it is in Russia with whom the United States fought a cold war for 40 years.

Richardson said the peninsula is at the same latitude as Portland, Oregon, U.S.A. and Barcelona, Spain. Its temperatures are mild and comfortable in the summer, and cold and blustery in the winter but with little snow cover.

"Winter playing conditions will be much like Pebble Beach [in California] and the Pacific Northwest," Richardson said.

Snyder said the property is the most spectacular he has had to work with in his 35 years as a golf course architect.

It is beautiful, rich, rolling land that sometimes falls and other times softly ebbs down to the Sea of Japan.

"It is rocky, in some places going down 100 feet or more to remote beaches," Richardson said. "There are some big rock outcroppings—waves crash, blue water sprays..."

Richardson and Snyder will design two golf courses in the first phase of the project's 10- to 15-year buildout. One lodge will be built in that first phase.

Plans call for eventual construction of three resorts. Amenities will include a gambling casino and hunting, fishing, scuba diving, wind surfing, horseback riding, boating, and skeet shooting facilities.

To this point, developers do not know how far they will have to go to bring in utilities. It could be four miles or 50, Reaney said. The land planners are also working on other facets of the infrastructure.

The speed of construction will be "driven by economic conditions, timing and demand," Reaney said.

"Everything is poised and ready to go," Richardson said.

The principals have been working on the project since 1989 and Reaney said the Russian government "is excited about it."

But the delay has been insuring the investment money.

"You're on a frontier and you have to be careful," Reaney said. He is trying to work out a certified lease, guaranteeing that the government won't step in and take over the property after it has been developed.

Moscow officials have approved the project. But the government is still in turmoil and the ruble's value is shaky.

Snyder and Richardson have identified seven sites for golf courses at The Peninsula, with plenty of opportunity for links-style layouts. The routing for the first 27-hole course has ocean, valley and canyon nines—the ocean nine sporting seven holes on the sea.

Three other course complexes have also been targeted.

They will all be connected by just one figure eight-shaped road with no traffic except shuttles, golf cars and possibly horse-drawn carriages.

Northern Calif. GA builds on success with Poppy Hills

Group plans track in Livermore Valley

PEBBLE BEACH, Calif. — President Bob Foster has announced the Northern California Golf Association (NCGA) has entered into an agreement to develop an NCGA public golf facility near Livermore.

"In an effort to continue our effort to enhance the membership services of the NCGA, our board of directors has unanimously endorsed the agreement

to build a championship golf facility on a site in the rolling foothills of the southeast Livermore Valley," said Foster of plans to develop second NCGA golf course.

"The NCGA membership has experienced tremendous growth in the past five years. Our needs for future tournament play and affordable golf demand attention. We feel this project will be very beneficial. Past President Jerry Blackmore has been instrumental in helping to put the deal together.

"The NCGA-owned Poppy Hills

Golf Course on 17-Mile Drive in Pebble Beach opened June 1, 1986. Our course in Livermore will be called Poppy Ridge and will be a championship facility of 27 holes," Foster continued.

NCGA membership provided Poppy Hills with 76 percent of its 1992 play. It was used for the NCAA Men's Championships in 1991 and is now part of the AT&T Pebble Beach Pro-Am rotation.

Poppy Ridge will be located in the Wine Region of the South Livermore Valley and, with the fi-

nalization of the South Livermore Valley Area Plan by the Alameda County Board of Supervisors, the expansion of this wine region has been set in motion.

Poppy Ridge will be developed jointly with The De Silva Group Inc. Plans call for construction of the facility to begin a year after final plan approval. Gene Bates Golf Design has prepared the initial route plan for Poppy Ridge.

Foster said the NCGA would continue to try to buy Mather Air Force Base course.

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'Build with the average player in mind, but also accommodate the tournament player, and I think you have a great golf course.'
— Robert Wrenn

Tour pro Wrenn, George design first course together

By MARK LESLIE

WILLIAMSBURG, Va. — PGA Tour pro Robert Wrenn Jr. and Lester George have joined forces to design their first course together — The Colonial.

Construction begins this spring on the championship daily-fee facility. The par-72 course will measure from 5,500 to 6,900 yards off four sets of tees. A range will be surrounded by a three-hole practice area consisting of a 3, 4 and 5.

"Hopefully, we'll do a number of additional courses together,"

said Wrenn, a native Richmond where George's Colonial Golf Design is headquartered. "I hope to do a couple a year with him."

"I'm working as a consultant on this one [The Colonial]. My greatest input will come when we actually start clearing land and I can help make some field decisions with [George]... Obviously, field changes get expensive and you want to avoid them if you can. But to build a good course you have to go out with an open mind and make adjustments to get the best

bang for your buck."

At The Colonial, Wrenn and George are working with a property bordered on one side by more than 4,000 feet of tidal marsh.

"We have worked very hard to preserve the sensitive wetlands, habitats and specimen trees that exist on the site, while creating a memorable, challenging golf course," Wrenn said.

"From a golf course architecture perspective, the terrain has a rare blend of transitional slopes and predominantly flat ridges that

make for challenging and beautiful golf," George added. "We are extremely fortunate to have a piece of land so perfectly suited for golf."

"The entire design has been predicated on 'uncovering' a golf course, not fabricating one with enormous earth movement."

The 33-year-old Wrenn took the PGA Tour by storm when he nearly caught the record 27-under-par while winning the Buick Open in 1987.

That kind of impact on the world of course architecture is not on Wrenn's mind, as he continues to concentrate on playing the Tour. But he does have definite ideas of a well-designed golf track.

"I've always been a real fan of traditional-type golf courses. I'm not a fan of target golf courses," he said.

Wrenn said too many courses were built the last 20 years that were "too difficult and severe for the average player. The 15-handicapper is the backbone of golf and he's the one you have to really cater to."

"Build with the average player in mind, but also accommodate the tournament player, and I think you have a great golf course."

He said he likes "subtle greens — not huge mounds, undulations and elephants buried."

When golfers tee off from Wrenn's holes, he wants them to see "that it's nice-looking, that there's trouble out there and you have to stay from it. But it's not confusing."

Cocoa Beach CC opens 3rd nine to finish remake

COCOA BEACH, Fla. — The total renovation of the old Cocoa Beach Country Club is complete, with opening of the final nine holes for the 27-hole facility.

In March 1992 the former Cocoa Beach Municipal Golf Course re-opened its original 18-hole course, now a full-blown upscale public recreation facility with clubhouse and sports complex.

Then course architect Charles Ankrum went to work on the new nine, designing distinctive holes with abundant mounds and lakes.

City residents voted in 1989 to spend \$4.3 million to overhaul the facility to meet the demands of tourists to the resort community. The windswept terrain borders on a mile and a half of Banana River shoreline about a half mile from the Atlantic Ocean.

The three new nines are the River Course, featuring eight water holes; Dolphin Course, with water on all holes; and Lakes Course, with seven water hazards.

The Audubon Society has inventoried 41 species of birds on the property, and dolphins and manatees inhabit the river.

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RHÔNE-POULENC

Clifton layout spices Grey Oaks

NAPLES, Fla. — Grey Oaks Country Club has been designed with luxury features and amenities developers hope will ensure it will be one of Collier County's premier country club communities.

Golfers at Grey Oaks will enjoy a Lloyd Clifton-designed course that also has visual design elements when traveling from tee to tee. The clubhouse has been built on an elevated site with a spectacular side view that spans the 18th green and fairway. The entryway to the community has also been designed, with an arched bridge that showcases the course and surrounding waterway.

The first phase of Grey Oaks Country Club, which includes an 18-hole championship course, a contemporary clubhouse and custom estate homes on wooded homesites, opened Jan. 29.

It is being developed by Peninsula Improvement Corp. on 1,600 acres of land owned by the Collier family since the early 1900s.

Fifty-four holes of golf are planned at Grey Oaks.

Clifton's design sports five sets of tees on each hole to accommodate a wide range of players. Subsequent courses will be designed in nine-hole increments as membership increases.

The clubhouse was designed by Diedrich Architects and Associates, with interiors by Image Design, Inc.



Grey Oaks Country Club's par-3 6th hole.

Foster moves, takes on new projects

PHOENIX, Ariz. — The golf course design firm Keith Foster & Associates, which has moved to new offices here, is beginning construction on two projects in the area for Robson Communities.

Irwonwood, an 18-hole master-planned community, is being built south of the city.

The second nine holes at PebbleCreek, west of Phoenix, will soon be under construction, according to Foster. The first nine holes opened in January.

Foster has moved to new offices. The firm is now located at 3110 N. 16th St., Phoenix, Ariz., 85016. Its telephone number is 602-279-4232.

Staying at home

Graham, Panks use lush desert, 60-foot elevation change Tonto Verde in Ariz.

RIO VERDE, Ariz. — Former U.S. Open and PGA Champion David Graham, and his partner, Gary Panks, are designing the new Tonto Verde Golf Club here.

"With so many of our projects under way out of Arizona, we are very excited to be designing a first-class facility right in our own backyard," Graham said. "It will be an excellent opportunity to showcase our desert design philosophies in a spectacular setting."

The site for this 6,760-yard, par-72 course is characterized by a lush native Sonoran Desert landscape, with mature stands of ironwoods, palo verdes, and saguaro cactus. The Graham & Panks concept is to design the course with as little disruption to the native environment as possible, utilizing the existing landforms and mature trees in their routing.

The 60-foot elevation change across the property, numerous natural washes and views to the McDowells and the Mazatzal Mountain ranges, offer a unique opportunity to create 18 distinctively different holes.

Dave Ritchie, president of Rio Verde Development, said construction was scheduled to begin by April.

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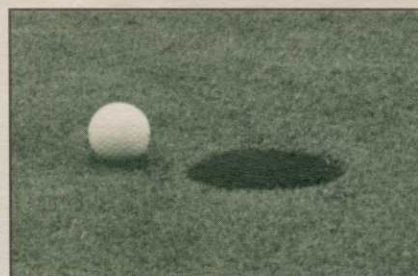


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Clemson officials pushing ahead on handicapped-accessible course

Financing hits snag but planners positive

By MARK LESLIE

CLEMSON, S.C. — Clemson University officials are still struggling to win final approval and gain financing to build a golf course designed as a handicapped-accessible "working laboratory."

Jeff Martin, director of conference and guest services at Clemson, said he feels confident

final arrangements will be made. But he couldn't set a date.

"If we're lucky, we're probably talking a minimum of six months before we can break ground — maybe longer," said Dr. Lawrence Allen, head of the Department of Parks, Recreation and Tourism Management.

Legislative and academic officials in the state support the project, which will also eventually include a conference center and, possibly, a hotel.

"We're working on the financing mechanisms," Martin said.

Plans call for the non-profit Clemson Foundation to donate about \$2.2 million and for membership fees to total \$1.5 million to produce the amount needed to build the course.

But the foundation must first arrange with the Internal Revenue Service so it does not risk its tax-free status.

Martin is not concerned about getting final state approval. That

will come in the form of a vote by the legislature's Joint Fund Review Board.

Clemson students and faculty expect to use the course property as a living laboratory to study such things as turfgrass, water quality, wildlife and hotel management.

Officials in the therapeutic recreation program hope to use it for the physically challenged and to become a national clearinghouse for the needs of the handicapped.

Allen said: "Our big push now

is to address the accessibility issue. The program is geared toward that and the long-term impact will relate to that specifically. Our mission is to build a championship course that integrates the disabled golfer but still is very challenging for able-bodied.

"There's a tremendous payoff in this for everybody — the industry, golfers and the disabled."

Riverside Golf Group architect Steven Melnyk of Jacksonville, Fla., will design the course.

Hills shows off Morgan River's oaks on 2nd 9

BEAUFORT, S.C. — Construction has begun on the second nine holes of the Morgan River course at Dataw Island. The course was designed by Arthur Hills and is scheduled to be completed in the fall.

The front nine of the Morgan River course was opened two years ago and construction of the second nine is one year ahead of schedule, according to Dataw Island President William Cochrane.

Hills describes the 13th and 14th holes as "our picture holes."

"The 13th hole goes out into a huge oak grove," he said. "So, in effect, the hole will be framed by the massive trees. It's some of the prettiest property on the whole course. The 14th hole meanders along the Morgan River and has limitless views of the river and nearby islands. It's very dramatic."

ASGCA stressing ADA, environment at annual convention

PHILADELPHIA — The American Society of Golf Course Architects (ASGCA) will hold its 47th annual meeting April 25-29, at the Ritz-Carlton Hotel here.

ASGCA President Art Hills said the meeting's professional development seminars will focus on several key areas, including the environment, how the Americans With Disabilities Act (ADA) impacts golf course design, and ways in which architects and builders can cooperate to prepare better construction specifications.

The ASGCA also will present the Donald Ross Award to golf course builder Brent Wadsworth at a banquet Monday, April 26, at Philadelphia Cricket Club. Wadsworth, chairman of Wadsworth Golf Construction Co., has built more than 350 golf courses throughout the United States during the past 35 years.

Members also will spend a full day at USGA headquarters in Far Hills, N.J., discussing green specifications, modern golf equipment and its relationship to course architecture, and course ratings.

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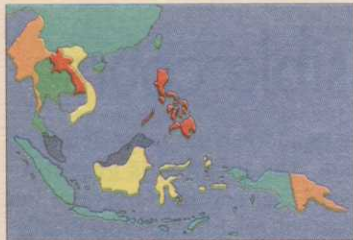
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ROUND ABOUT ASIA

MARSH DISTINGUISHING HIMSELF AS COURSE DESIGNER

Graham Marsh, who played a distinguished career on the Professional Golfers Association (PGA) Tour, is designing golf courses throughout the Pacific.

From his Queensland, Australia, headquarters, Marsh opened Horizons Golf Resort in Port Stephens, Australia, in January and has two other projects under construction in his homeland.

Terrey Hills Golf & Country Club in Sydney is in the midst of construction, while building begins in April on Secret Harbour in Western Australia.

Marsh's young company employs 21 people and has projects in the ground in Japan, Malaysia, Thailand, Indonesia, South Korea and Saipan.

He has another 15 projects on the drawing boards.

JONES BUSY FROM JAPAN TO PHILIPPINES

CANLUBANG, Phillipines — Sta. Elena Golf & Country Club will open its second nine holes here soon, completing what its designer believes is an interesting test of golf.

Robert Trent Jones Jr. of Robert Trent Jones II International, Ltd. said the front nine of the course was very well received at its preliminary opening last October.

"I'm very proud of that one," Jones said. "It's a good site. Gentle but interesting terrain. It includes draining channels that are jungle-like. Each hole is different. There's no repetition. The shaping is excellent. The greens are interesting."

Sta. Elena is Jones' fifth course in this country where, he said, "the climate is great — like Hawaii — and you can get high-quality golf and great service very inexpensively."

Jones' firm has also opened Santiburi Golf Club in the mountains in Chiang Rai opened late last year.

Another new Jones course — Eastern Star in Ban Chang — will open in late March.

Meanwhile, Jones II International courses under construction in Japan are:

- Regus Crest Golf Club in Hiroshima Prefecture, where the West Course will open in mid-summer and the East Course is half complete.
- Towa Nasu Highland Golf Club in Tochigi Prefecture, a resort course that will open in July.
- A nine-hole addition to the 27-hole Sun Hills Country Club outside Tokyo will open in the spring.
- King Hills Country Club in Kumamoto will open in 1994.

- The Country Club in Shiga Prefecture has just started construction.

- Katsura Golf Club in Hokkaido will open in the summer.

- Miho Golf Club outside Tokyo will open in the fall.

OLSON OPENS KOREAN TRACK

ICHON, South Korea — Dong Jin Country Club, a 27-hole double-green championship golf course, has opened here.

Designed by Cal Olson of Costa Mesa, Calif., U.S.A., the course has many large rock outcroppings and strategically placed water features.

tures.

Even though approximately 10 million cubic meters of earth and rock were moved during the grading operation of Dong Jin — because of the steep terrain — the final course rests naturally in the dynamic mountainside.

GRIFFITHS DESIGNS IN THAILAND

PATTAYA, Thailand — Phoenix Golf and Country Club will unveil its final nine holes here with a "soft opening" in April and grand opening in August, according to Denis Griffiths of the golf course design firm Denis Griffiths

and Associates.

Eighteen holes of the 27-hole facility opened last year, said Griffiths, of Braselton, Ga., U.S.A.

Phoenix is a cornerstone of a high-end housing development — as most golf courses are in this country.

Griffiths said it is set on "an outstanding piece of property," with rolling land very unusual for Thailand. About one mile inland from the coast, it offers panoramic views of the ocean.

Griffiths' lead designer in Asia, Tom Johnson, co-designed Phoenix and is overseeing construction of Chanthaburi and Dynasty

country clubs and a complete renovation of Thai Country Club in Chanthaburi.

Griffiths and Johnson teamed up on Press Country Club in Takasaki, Japan, which opened last November.

It measures slightly over 7,000 yards but is very playable for that distance, he said.

"It's a little relief from some of the Japanese courses, which are so difficult. It doesn't have long carries. The fairway grades are very playable. It has a pleasant combination of golf holes," he said.



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PERRY DYE LAYOUT BEING BUILT IN THAILAND

THAI MUANG, THAILAND—An 18-hole Perry O. Dye golf course is being built as part of a seaside development in this town of 4,000 located in southern Thailand about 70 km (43.5 miles) north of Phuket City.

Project owner Thai Muang Beach Resort Co. Ltd. is constructing 18 holes, a clubhouse, and golf lodges as phase one of the project. Subsequent phases will include deluxe villas and two "five-star hotels with marina along the Andaman Sea.

The championship course is

scheduled to open in mid-1993.

HAS CONSTRUCTION PEAKED IN THAILAND?

BANGKOK, Thailand—Golf course construction has apparently peaked in this country, at least for the time being.

Thailand's economy grew in the 10-percent range over the last four or five years and course projects moved smoothly through the development process.

But architect Denis Griffiths of Griffiths and Associates in Braselton, Georgia, U.S.A., said he feels construction activity

"peaked last summer."

Growth has slowed to about 7-1/2 to 8 percent, he said.

A number of new projects are on the boards but haven't moved forward, Griffiths said.

His firm is fortunate that it "got in early" on several projects, he added.

Robert Trent Jones Jr., of Palo Alto, Calif., who has designed five courses in Thailand over the years, said a lot of courses were built and "it will take time for them all to become economically viable as individual entities.

Some will succeed because they are well run. Some may not suc-

ceed. But the marketplace will shake that out."

NICKLAUS EXCITED ABOUT HIS WORK IN ASIA

BINTAN ISLAND, Malaysia—Golden Bear International has agreed to build a Jack Nicklaus-designed golf course here. The Nicklaus design will be the first golf course built for Bintan Lagoon Beach & Golf Resort.

"We are excited to be the first to build a golf course on such a rare and beautiful piece of island property," said Nicklaus. "This resort promises to be one of the

best in the Far East."

The property is part of the 19,000-hectare Bintan Beach International Resort. SAFE Bintan Resort signed a letter of intent last September to lease 240 hectares the northern coast of Pulau Bintan. Nicklaus will design the first of three championship courses along the white sand beaches of the island. Construction will start in 1992.

•••

Golden Bear International has also announced the opening of two multimillion-dollar state-of-the-art teaching and practice facilities in Asia—the Jack Nicklaus Golf Center in Japan and the Jack Nicklaus Academy of Golf in the Philippines.

"There is a great demand for high-quality instruction and practice facilities all over the world," said GBI President Richard Bellinger. "The golf centers and academies provide both premier facilities and premier instruction."

The Jack Nicklaus Golf Center, the first ever in Japan, has opened in Tsukuba through an exclusive agreement between GBI and Mitsubishi Corp., and Suntory Limited for the country.

In Manila, the first Jack Nicklaus Academy of Golf opened in the Philippines under an exclusive agreement between Golden Bear and American Golf Centers, a subsidiary of AIA and American International Group, the New York-based insurance conglomerate and the Fil-Estate Group. The company will develop the centers and academies for the balance of Pacific Rim countries, exclusive of Japan.

The Jack Nicklaus Golf Center, designed by GBI, features a two-tier practice facility with 80 fully heated practice stations for year-round play; a contoured practice fairway with numerous target green complexes.

Also, an instructional staff hand-picked by Nicklaus and Jim Flick; the Jack Nicklaus Coaching Studio featuring advanced video and computer analysis, and a full-service golf shop and dining facility; a short-game practice area; and a practice putting green.

The Jack Nicklaus Academy of Golf features 36 holes of Nicklaus golf surrounding the practice facility.

The golf instruction program taught at the facility is identical to the curriculum used at the Nicklaus/Flick Golf Schools in the United States. From Palm Beach to Paris, and Manila to Tokyo, Golden Bear's goal is to provide all students the same level of instruction and a consistent message when learning the game.

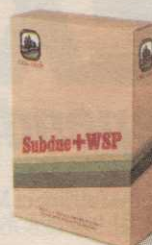
Jack Nicklaus Golf Operations, a division of GBI, will be involved in all phases of the development of the facilities including the design, contouring the golf elements, implementation of the teaching curriculum and training of the instructional staff.

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Sand Creek renovates 18, adding new 9

CHESTERTON, Ind. — Sand Creek Country Club has completed renovation of its original 18 holes and will begin this spring the construction of a new nine.

Architect Charles Howard is overseeing the design at the private country club that was built 17 years ago as Bethlehem Steel's private club.

Sand Creek is set amidst northwest Indiana's dune country, and Howard has installed new wetlands, initiated an erosion-control project and preserved old forest acreage.

Several holes on the original course — which was designed by Ken Killian and Dick Nugent — underwent major renovation in 1992 and more will be completed this year. All bunkers have been entirely reworked, including drainage systems and addition of new, highest-quality sand.

Shortly after Jerry Mobley took over as general manager, he started the renovation process in motion and nearly tripled the size of the grounds maintenance size as a commitment to grooming.

The maintenance crew has subjected fairways, greens and tees to thatch removal, helping improve playing characteristics on the course and reducing the amount of chemical treatment and water necessary.

Practice ranges conference topic

KIAWAH ISLAND, S.C. — Planning and developing a golf practice range is the subject of a conference at the Kiawah Island Inn at West Beach, March 21-24.

Scott Marlowe of the sponsoring Forecast Golf Marketing & Financial Systems, Inc., will be the keynote speaker. Marlowe is a faculty member for the Professional Golfers' Association golf range seminar program.

James Murphy of Forecast will discuss pre-development range marketing, strategic planning and promotional issues; Jay Livingood of Forecast will address golf range development, design and construction issues; and Terry Sopko of Wittek Golf Supply will examine equipping ranges.

Steve di Costanzo will represent the co-sponsoring Golf Range and Recreation Association and be event moderator.

Covered will be market analysis and site selection, planning and development process, and initial operations and management.

Jensen Associates promote Karn

DENVER — David Jensen Associates Inc., a Denver-based land planning firm, is pleased to announce that Craig Karn has been promoted to senior associate. His excellent leadership ability and expertise has been utilized on many successful projects across the country, including the Grand Legacy at Green Valley in Henderson, Nev., and Hamilton Proper in Indianapolis, Ind. In his new position Karn will be responsible for project management, design, and guidance of project managers and design staff.



The 10th hole at Sand Creek has undergone extensive work. The green on the 527-yard par-5 has been rebuilt and its fairway, tee boxes and lake renovated.

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Architects spell out steps to construction

Responding to environmental issues, the American Society of Golf Course Architects has produced golf course development checklist. It is intended to help developers, municipalities and those involved in the development and permitting process to understand and complete the many steps involved in developing a golf course.

"The design, construction and maintenance of a golf course has evolved into a complex process," said Art Hills, ASGCA president. "We've developed this checklist to respond to today's environmental issues, the economic climate, and the many demands established by the project objectives."

The checklist is included in a 48-page, full-color brochure, "An Environmental Approach To Golf Course Development."

19 STEPS LISTED

Each proposed site and golf course will have its own characteristics that require specific solutions for its design, construction and maintenance, according to Hills.

The 19 steps, discussed in detail in the brochure, serve as a checklist for an environmentally responsible approach to the development of a golf course:

- Conduct a feasibility study to verify the need for a golf course, assess the suitability of the site and establish basic goals for the project.
- Assemble a team of qualified professionals led by a golf course architect to address the complex issues involved in the planning, design and construction of the golf course.
- Perform a thorough site analysis with up-to-date and accurate information.
- Review all applicable land use, environmental and construction regulations.
- Confirm site suitability and goals for the project with the client. Establish the design criteria for the golf course.
- Develop a conceptual plan which addresses the environmental issues and design criteria, include responsible management practices for the construction and maintenance of the golf course.
- Attend a pre-submittal meeting with the regulatory agencies to review and receive input on the conceptual plan.
- Refine the concept based on the input received and develop a final master plan.
- Submit the master plan for required approvals.
- Stake out the golf course. Make minor adjustments, if necessary, to take advantage of natural features and adapt compatibly to the site.
- Develop a thorough set of construction plans and specifications for the golf course. Finalize the responsible management practices.
- Submit documents for construction permits.

- Hire the golf course superintendent.
- Start construction of the golf course.
- Perform site inspection visits to ensure that the golf course is being constructed in accordance with the plans and intent of the design. Monitor controls for environmental protection.
- Implement responsible management practices for maintenance prior to the completion of construction.
- Complete construction of the

golf course. Maintain environmental controls until all disturbed areas are stabilized.

- Prepare the golf course for opening. Monitor remaining environmental controls during the grow-in period.

- Open for play. Tee it up and enjoy both the game and the environment. Continue responsible management practices during maintenance of the golf course.

To obtain a copy, send a check for \$10 to: ASGCA, 221 N. LaSalle St., Chicago, Ill. 60601.

Missouri city opening first muni course

CHILLICOTHE, Mo. — The city of Chillicothe plans to open its first municipal golf course on May 1 — an 18-hole track created by J. Porter Gibson and Rick Isola of Fairway Development Group.

Green Hills Golf Course measures almost 6,900 yards from the back tees and its large-size bentgrass greens average 6,500 square feet.

Gibson and Isola used the existing rolling terrain and added extensive mounding and 30 bunkers.

A 300-plus-yard practice range and 7,500-square-foot practice green augment the course.

Superintendent is Buddy Snowden, who came on board in November 1991 as a consultant during construction.



Jack Nicklaus II and Jack Nicklaus

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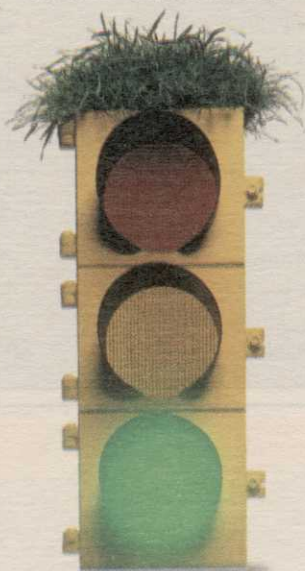


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CIRCLE #125

Direct Economic Impacts of Regulation Golf Facilities in the U.S. — 1989

	Daily Fee	Municipal	Private	Total
Employees				
Full-time	71,272	14,015	81,555	166,842
Part-time	34,604	11,315	52,295	98,214
Total Employment	105,876	25,330	133,850	265,056
Wages (000s)	\$855	\$199	\$1,228	\$2,282
Total Expenditures (000s)	\$2,230	\$482	\$2,790	\$5,502

The National Golf Foundation estimates that the direct economic impact of all regulation facility operations in the United States exceeded \$5.5 billion in operating expenditures, including nearly \$2.3 billion in wages providing more than 265,000 full- and part-time jobs. This data shows breakdowns of employment, wages and total expenditures by facility type.

Nine-hole regulation golf facilities (Mean of the sample)

A total of 321 regulation nine-hole facility operators responded to the National Golf Foundation survey, representing about 8 percent of all such facilities nationwide. The average economic impact of these facility operations, by type, in 1989, follows:

	Daily Fee	Municipal	Private
Employees			
Full-time	7	6	6
Part-time	5	4	7
Total Employment	12	10	13
Wages (000s)	\$55.9	\$59.9	\$88.2
Total Expenditures (000s)	\$151.8	\$135.7	\$198.2

18-hole regulation golf facilities (Mean of the Sample)

A total of 776 regulation, 18-hole facility operators responded to the NGF's survey, representing approximately 12 percent of all such facilities nationwide. Their average direct economic impact follows:

	Daily Fee	Municipal	Private
Employees			
Full-time	17	14	37
Part-time	7	12	23
Total Employment	24	26	60
Wages (000s)	\$247.7	\$220.8	\$564.0
Total Expenditures (000s)	\$611.7	\$527.4	\$1,284.5

27+-hole regulation golf facilities (Mean of the sample)

A total of 148, 27-plus-hole facility operators responded to the survey, representing nearly 23 percent of all such facilities. The average direct economic impacts of these facilities follows:

	Daily Fee	Municipal	Private
Employees			
Full-time	51	25	73
Part-time	24	21	35
Total Employment	75	46	108
Wages (000s)	\$410.4	\$375.5	\$1,077.6
Total Expenditures (000s)	\$1,360.3	\$999.3	\$2,440.9

U.S. economy benefits greatly from golf industry, study finds

The golf industry infuses the U.S. economy with billions of dollars and hundreds of thousands of jobs, according to figures released in a study commissioned by the National Golf Foundation.

The Jupiter, Fla.-based NGF estimated the direct economic impact of all regulation facility operations in the United States in 1989 exceeded \$5.5 billion in operating expenditures, including nearly \$2.3 billion in wages, and provided more than 265,000 full- and part-time jobs.

Using the "multiplier effect," this means regulation courses produced \$17.5 billion in business sales/receipts; the full-time equivalent of 376,000 jobs; \$6.1 billion in household income; and nearly \$2.7 billion in local, state and federal taxes, according to the NGF. The study was based on figures for 1989 when there were 12,600 golf facilities in the United States. There are closer to 13,500 today.

The report — "The Economic Impact of Golf Course Operations on Local, Regional and National Economies" — includes a worksheet which golf course operators can use to determine the economic impact of their facility on their region.

The report said that in addition to providing recreational opportunities and adding open space, golf facilities mean salaries, wages, tips and so forth paid to employees as well as others in the community whose companies sell the facilities services, equipment and supplies.

"Furthermore, expenditures made by businesses and households, as a result of the facility's direct payment for goods and services, expand jobs and income indirectly within the economy of the region [also called multiplier effects]," the report said.

Other economic benefits, it said, are:

- Non-municipal facilities pay property taxes, while municipal ones may contribute significant operating surpluses directly to public funds.
- Nearby property values are enhanced, increasing a locality's tax base and fiscal

Using the 'multiplier effect,' regulation courses produced \$17.5 billion in business sales/receipts; the full-time equivalent of 376,000 jobs; \$6.1 billion in household income; and nearly \$2.7 billion in local, state and federal taxes

revenues.

• By elevating the overall attractiveness and quality of life of its community, a golf facility can be an important influence in both household and business location decisions that improve fiscal and economic potential.

• Local restaurants, hotels, service stations, other retailers — and the people they employ — can benefit from sales they might not otherwise realize through visitors to the golf facilities.

The survey results indicate private clubs, on average, spend more than double that of municipal or daily-fee facilities on annual operations. This means their impact on the economy of an area is likely to be greater, even as they may offer less opportunity for local resident facility play.

Referring to the economic multiplier effect, the report said: "Regional economies are usually diverse enough to assure that for every dollar spent by a golf facility, more than a dollar is realized in the economy of the region."

"The expenditures made for a golf facility typically affect many businesses and households within its area economy. These include not only the direct vendors but also the suppliers to the vendors and so on... Similarly, household earnings and job opportunities expand regionally."

The report and worksheet are available from the NGF at 1150 South U.S. Highway One, Jupiter, Fla. 33477; telephone 407-744-6006.

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CIRCLE #127

Leading states in golf courses under construction

(as of Dec. 31, 1992)

Illinois	42
Michigan	40
Florida	36
Pennsylvania	28
California	26
Ohio	26
Texas	24
North Carolina	23
Wisconsin	23
New York	23
Missouri	22
Minnesota	21
Alabama	21
Indiana	19
Georgia	18

Leading states in golf course openings in 1992

(End-of-year figures)

Michigan	29
Florida	23
Indiana	16
Ohio	16
Illinois	15
Georgia	15
Kentucky	15
New York	14
Virginia	13
Alabama	12
Minnesota	12
Pennsylvania	12
California	11
Texas	11
Missouri	10

Davis firm busy in Southeast

GAINESVILLE, Ga. — The golf course architectural firm of Arthur L. Davis, Inc. is working on several projects in various stages of planning and development in the Southeast.

Construction is virtually complete on a 20-hole addition at Fort Jackson (S.C.) Golf Club.

Meanwhile, Davis is in the bidding phase on 18-hole The Rome (Ga.) Golf Course, and

the design phase on a 10-hole addition to LaFayette (Ga.) Golf Club, the 27-hole Music City National Golf Club in Tennessee, and a renovation of Fort McPherson Golf Course in Atlanta, Ga.

According to Davis' office, financing is being sought for new 18-hole courses in Clover, S.C., and Woodfin, N.C. — called Old Mill Golf Club and Woodfin Golf Club, respectively.

Forecast: Player pool up 4.5m

Continued from page 3

segmentation perspective, municipal courses are not direct competitors to daily-fee operations."

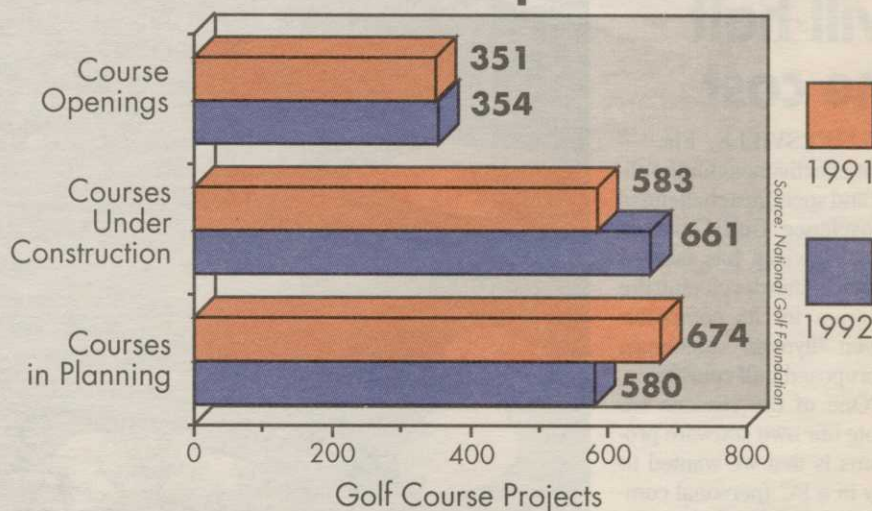
Studies show that Americans reduce — not eliminate — their leisure activities during a recession. Bearing that in mind, Marlowe is less than enthusiastic about President Clinton's tax proposal and its

perceived effect on the golf industry.

"It will take away discretionary dollars, which fuel the industry," Marlowe said. "I think the Clinton plan has a lot of holes and I can't support it. I think it's going to hurt golf."

"I think the energy tax will be the single biggest culprit. And if you take away the entertainment deduction, it will really hurt."

Year-End Development Totals



NGF report:

Course openings, construction peaking

JUPITER, Fla. — Fresh National Golf Foundation figures indicate that another year chock full of course openings lies ahead, followed by a period of uncertainty.

At the end of 1992, 509 courses were scheduled to open in 1993. Since experience shows that about 70 percent of the facilities scheduled to open in a given year actually do, about 350 tracks should open this year.

According to the NGF's annual report, Golf Facilities in the U.S., that would be close to the previous two years — 351 in 1991 and 354 in 1992. The 354 openings were the most in 22 years, according to the NGF.

The national supply of courses has grown by 1,284 since 1989 — the highest four-year total since 1970-73, when 1,344 came on line.

The NGF said that as of last Dec. 31, 622 courses were under construction. Another 580 were in planning — 100 fewer than a year before.

NGF Vice President of Research Mike Russell said uncertainty surrounding many of these projects makes projections into

1994 almost impossible.

Among the report's other findings:

- Real estate continues to fade as a driving force in course development. At the same time, public development is increasing enough to fill that void. In 1989, 50 percent of new courses were tied to real estate. Today, it's about 27 percent. In 1989, 66 percent of new courses were public. Today, the percentage is 81.

- More of today's development is occurring at existing facilities — an indication of construction to meet ongoing demand in their communities.

- The interest in par-3, executive and other non-traditional facilities remains steady but still relatively low, representing about 10 percent of new openings.

- While development is beginning to level off in Florida and other Sunbelt areas, the Midwest appears to be emerging as the new leader in construction activity.

The 12 states opening the most courses in 1992 included Michigan (1st), Indiana and Ohio (tied, 3rd), Illinois and Kentucky (tied, 5th), Alabama and Minnesota (tied, 10th).

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CIRCLE #128

Technology will half the cost

GAINESVILLE, Fla. — Cost-effectiveness for the client and speed are challenges Geoscience Golf Development Services has tackled since it began developing the program for its computer-driven "flyover" videotapes of proposed golf courses.

"One of the reasons we wrote our own software programs is that we wanted to stay in a PC (personal computer) — off-the-shelf — environment," said Geoscience President Larry Hawkins. "The work-station environment is very expensive. There's a cost breakpoint where this is cost-effective for [prospective clients]. And we really had to contain the cost because it is a major animation production..."

"So we put a lot of work into saving on equipment, software and things of that nature."



A view created by Geoscience Inc. of the 10th green at Elbow Valley from one of the hillside homesites overlooking the course outside Calgary, Alberta.

Hawkins said some clients get so excited about the flyover's possibilities as a marketing tool that they don't worry about the cost.

"But when it comes down to pure economics, we really have to be cost-effective," he said.

A major part of the solution

lies in advances in the speed of computers, including processors due on the market this year that will half processing time, Hawkins said.

In a Geoscience videotape, the flyover of each hole takes 12 to 17 seconds. There are 30 frames per second of viewing. Each frame must be ren-

dered as a separate image. Depending on the complexity of the image, it can take 15 minutes to 1 hour per frame to create.

"You can see the magnitude of the work," said Hawkins, who employs three people working full-time on the images.

Animation was 'the next level' for Geoscience

Geoscience got into animation as an outgrowth of its permitting work. It was providing CAD services to golf course architects and developers, including Gary Player Design Company.

As a result, some of its clients started asking if the company could render conceptual views of golf holes.

"The more we did, the more interesting it got ... and the more encouragement we got," Hawkins said.

So in March 1992 Geoscience unveiled its new capabilities, gaining Mission Hills as one client, along with others in New Jersey and New York. Its work at Mission Hills was preliminary, three-dimensional conceptual "still" renderings of clubhouse turns and areas that involved water features at the Gary Player course.

Then along came the developers of Elbow Valley in Calgary, Alberta, Canada, which features a golf course designed by David Graham and Gary Panks.

The Elbow Valley video includes a lot of background because it was a three-dimensional model of the entire 1,100 acres.

"Otherwise, we'd do a narrow view of just the golf course envelope. Here, we showed more of the surrounding territory. That was important because this site has so many beautiful features and streams," Hawkins said.

Aaron Alberts of Elbow Valley said he will use the site preview primarily as a marketing tool.

Computer animation adds extra punch

Continued from page 1

"It bridges that marketing gap" between conception and construction, said Hawkins. His "site previews" are attracting interest for use in developing, marketing, designing — even obtaining permitting approval.

"A developer looking for money, a marketer seeking to sell memberships in a proposed golf course, an architect wondering, 'What is this going to look like?' ... all of the above will be interested in this," Hawkins said.

"The biggest interest is from the developer. They can use these animations as the showpiece at their preview center while the course is under construction, to show to prospective members and homesite buyers."

Geoscience can even preview views of the golf course from surrounding homesites.

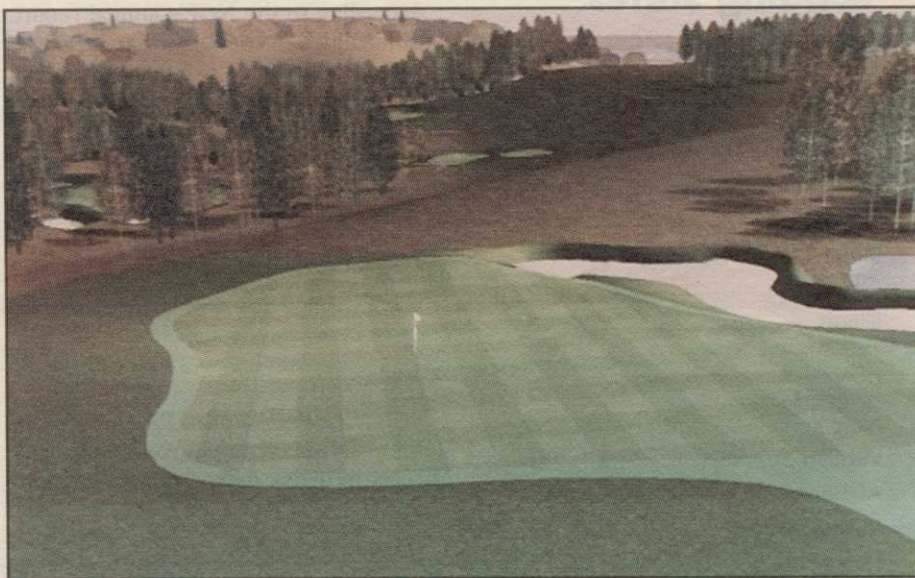
Aaron Alberts of Elbow Valley, a development being planned outside Calgary, Alberta, Canada, said he plans to integrate the video with "a residential component — possibly on that video or as a section of the marketing video we display here."

"We'll probably do a mix [of animation and real-life video]," he said.

Asked if he envisioned using the video to obtain financing, Alberts said: "You bet, if we decide to build another golf course, it's very effect in showing past materials for present projects, in obtaining financing or simply preliminary marketing to builders and potential investors."

Geoscience put four years of research and development into the software, taking the industry standard system to a more sophisticated level — the fly-over. It creates a sense of action, movement.

Sound-overs and voice-overs can add yet another dimension.



A still-frame view, taken from the animated video, of Elbow Valley's as-yet-unbuilt 17th green, with the 10th green in the trees at left rear.

"It takes the hard information that's in CAD and turns it into the soft, viewable information that the average person can watch a video of," said Scott Applegate, vice president of information systems for the Gary Player Design Group. "It's really an accurate representation. It's getting toward the artistic."

"The closer you get to realism in a rendering model situation, the closer you are into getting somebody into virtual reality... A lot of people go out to buy a lot and can't imagine what it's going to be like. By showing them a video and the playability of the golf course, you can pretty much guarantee a sale."

"I've got my finger on the pulse of this technology," Applegate said, "and [Geoscience's system] is far and away the best for realism. I've seen upwards of a couple dozen variations of a theme. Until I saw Larry's video, everything was pretty contrived."

Accuracy?

"Our renderings, in terms of scale, are as accurate as the architect's plans," Hawkins said. "That's what we really worked hard at perfecting. If an architect specifies he wants

a two-tiered green with a rise of a foot and a half, we have to be able to show that. If he specifies he wants raised elevation at the back of traps or hazards and it's a matter of a only few feet, we will show that."

WHAT'S NEEDED

To do its work, Geoscience requires a topographical map and aerial photos of the entire site, and the development and course architect's plans.

A day or two is spent on site, photographing the trees, documenting the features and what they look like, "so that we can get the detailed image we're after," Hawkins said.

"We can begin with the routing plan, but as the golf course gets designed that's how we know where to place bunkers, mounding and detailed features like that," Hawkins said.

The time required to complete the animation depends on how it is scripted. "For example, if we just do fly-overs of golf holes, it takes three to four months. If we're doing a full-blown presentation — showing the entire site plan and how the golf course integrates into the terrain — it

'The biggest interest is from the developer.

They can use these animations as the showpiece at their preview center while the course is under construction.'

— Larry Hawkins

takes five to six months," Hawkins said.

But, he said new computer processors due out this year will cut that time about in half.

Besides the normal low-level fly-over, Geoscience will do a high-altitude fly-over that shows the golf course in perspective with the landscape.

"We're really enjoying it. It's almost like putting together a television script — finding out what the clients want and how they perceive their program going, how they want to market it and what they want to emphasize about the site," Hawkins said.

"We're working on three projects now we're trying to get the owners [to use this]," Applegate said. "The amount of data we've got on a computer level would make what Larry does extremely easy for our clients to pay for and for Larry to create."

A TOOL FOR APPROVALS?

Asked if such a video could be effective at an approval hearing before a government board or agency, Hawkins said: "We're getting ready to do some [still rendering] concepts on wetland mitigation adjacent to a golf course for permitting approval. We have done similar things, but not to the three-dimensional level and not to the golf course level."

What is the next frontier for the pioneering Geoscience?

"We're headed toward full 3-D presentations of an entire site development plan as built, from drawings from the architect, the planner, the engineer. We'll put in roads and lots and the infrastructure such as the clubhouse. We can do that now, but one has hired us to do it," Hawkins said.

But he is confident "people would rather have a live video presentation of their project than a scale model."

World Woods: A destination waiting for a resort

By MARK LESLIE

HOMOSASSA, Fla. — World Woods Golf Club, featuring 45 holes and unique "practice park" designed by Tom Fazio, opened for play in this central Florida town on March 1 — a destination waiting for a resort.

"It's as high-quality golf as you can find anywhere," said Fazio. He termed it as the same caliber golf as Black Diamond, Lake Nona and John's Island West — three other Fazio facilities in Florida that have gained renown the last few years.

The owner, Interfive Corp., is exploring the possibility of building a hotel and other sorts of lodging, according to Mark Kizziar, vice president of Western Golf Properties, which is managing the facility.

"As we look at the component parts that are there, as well as those being planned for the future, the niche that that facility has to fit into is a destination resort."

Some firms have already expressed a "sincere interest [in building lodging] because of the quality of the property," Kizziar said, adding that another three golf courses are also on the drawing board.

Meanwhile, Western Golf Properties President Joe Black is excited about the golf that is already in the ground.

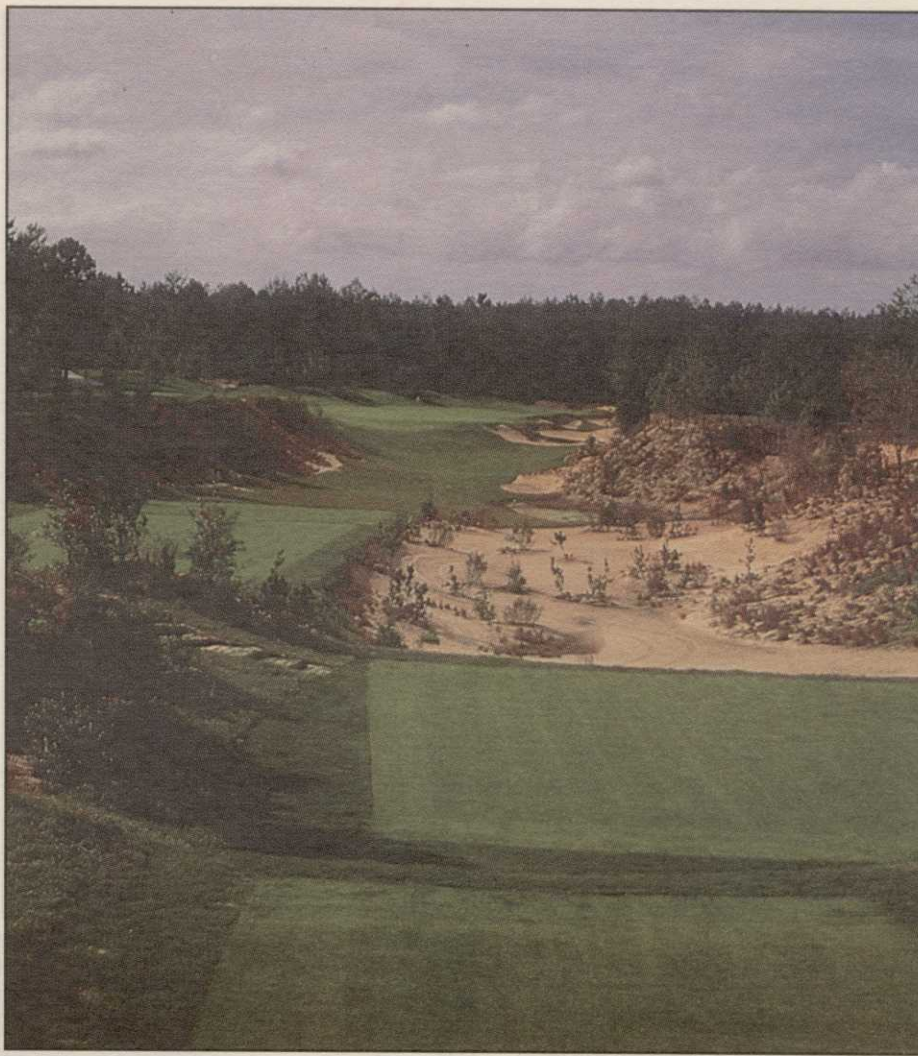
"World Woods is like having Augusta and Pine Valley and the finest practice facility in the world in the same location," he said.

World Woods consists of the 6,902-yard Pine Barrens Golf Course, 6,985-yard Rolling Oaks Golf Course, a nine-hole short course, 22-acre, four-sided practice range flanked by par-3, -4 and -5 practice holes, and a two-acre putting course.

Fazio used a property with 40-foot elevation changes, century-old trees and natural foliage, and created "two distinctive-style golf courses," he said.

"The Pine Barrens is all pine trees and sand," Fazio said. "The style is a combination of the sand hills of North Carolina — the kind of tree formation and sand at Pinehurst — and Pine Valley-Cypress Point sand-dune areas."

Rolling Oaks Golf Course, he said, is "much more manicured in terms of grasses, more formal landscaping — a combination of [the feel of] Jupiter Hills and Augusta National in terms of high-intense maintenance: that formal golf course look, with



The Pine Barrens course at World Woods.

'As we look at the component parts that are there ... the niche that that facility has to fit into is a destination resort.'

— Mark Kizziar, v-p
Western Golf Properties

oak trees and a lot of deciduous trees throughout the property."

Fazio said any one of the nine holes on the short course "could fit on any golf course in America. Any one is grand, and has well-formed and shaped holes with elevation change and vegetation.

The practice holes are reminiscent of the long, strong golf holes on the property.

The 20-acre "practice park" is complete with target greens and chipping greens shaped into the trees, with bunkers.

"You can hit into the greens based on the sun and winds," Fazio said.

The 36-hole putting course covers 70,000 square feet and boasts fingers and ears and chipping areas, the likes of which Fazio said he has "never done this on this scale."

First certified course builders announced

CHAPEL HILL, N.C. — The Golf Course Builders Association of America has announced its first group of certified golf course builders.

GCBA Executive Vice President Phil Arnold said the designation has been earned by Paul Clute & Associates of Hartland, Mich.; Golf Development Construction of Louisville, Ky.; Irvin Construction of Fisherville, Ky.; Moore Golf of Culpeper, Va.; Pierman Golf Co. of North Palm Beach, Fla.; and Wadsworth Construction Co. of Plainfield, Ill.

"I believe it's very important that the association identify competent and experienced golf course construction firms. Over time, I believe this certification program will be the standard by which all golf course builders will be judged," Arnold said.

Another 19 companies are involved in the process. It includes completing an application covering the company's history and past projects, obtaining letters of reference from a variety of people such as course superintendents, irrigation designers, architects, engineers, owner/developers, and financial institutions.

When all paperwork has been submitted, a company representative takes the certification examination, which consists of 100 multiple-choice questions on golf course construction.

The exam is offered twice a year.

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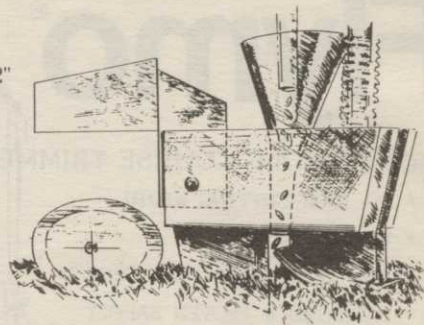
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All 18 are test greens at Outlaw

Continued from page 27

by Michael Hurdzan on which Schreiner was project architect — tests proved hopeful for the golf industry.

"In general, we found that while the concentrations of some of the contaminants were fairly high — and that being primarily the nutrients, nitrogen and phosphorus — the volume was almost insignificant," said John Barten, Hennepin Parks District water quality manager. "Only about 5 percent of the rainfall made it through the green."

Primarily, then, the water stayed in the turfgrass and root zone, or ran off the green. Studies by Watschke and Cooper report only traces of chemicals, far below danger levels, running off turfgrass.

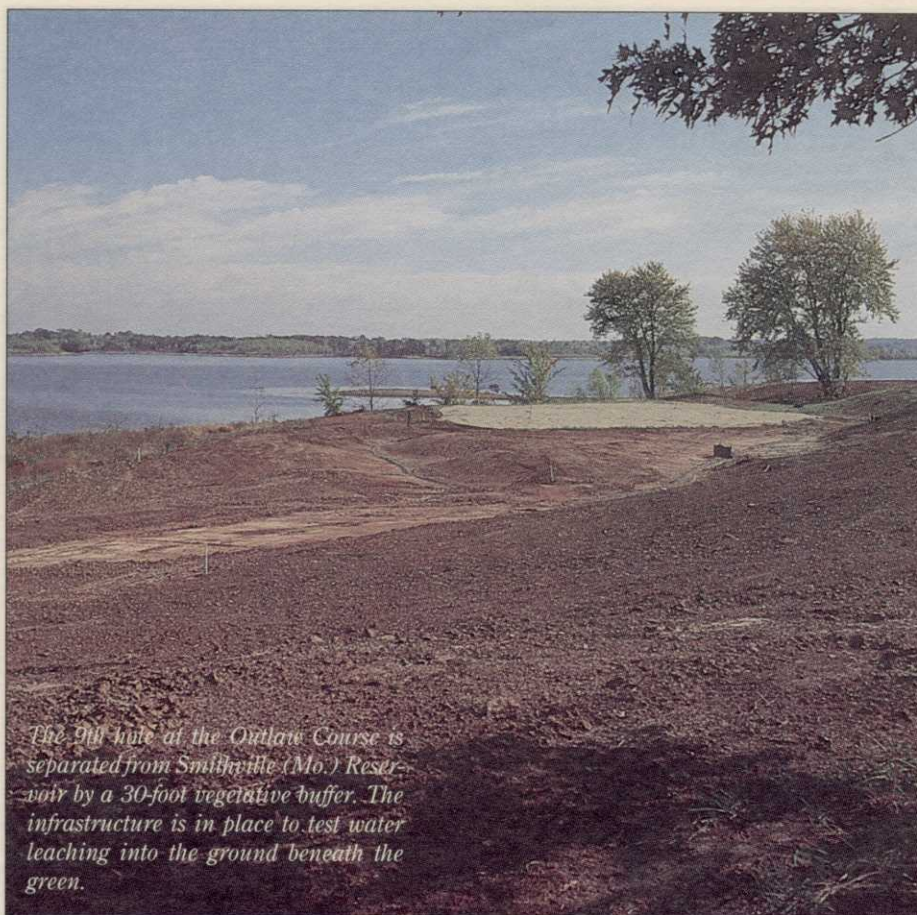
Before building the Outlaw, Schreiner sold his idea to the U.S. Army Corps of Engineers, which owns the reservoir, and the Clay County Parks Department, which is leasing the land for the golf course from the Corps.

"We already know what's coming through these brand-new greens and it's insignificant," Schreiner said, referring to the findings at Baker National which opened in 1990. "We're not hiding anything. We've got data that shows that insignificant nitrates and some phosphorus comes through these greens when they're first being established."

"From there, we don't really know. But, should we encounter any problems, we feel we have a system to deal with the leachates that come out... As the greens get older or mature, or if you have an application of a very hot chemical followed by a heavy rain that causes it to leach out faster than normal, you have an infrastructure in place."

While he is taking the initiative as a golf course architect, Schreiner said the Park Board also "loves that image."

"What I hope to have is the first 18-hole public course in this part of the country — if not anywhere else — that's got an



The 9th hole at the Outlaw Course is separated from Smithville (Mo.) Reservoir by a 30-foot vegetative buffer. The infrastructure is in place to test water leaching into the ground beneath the green.

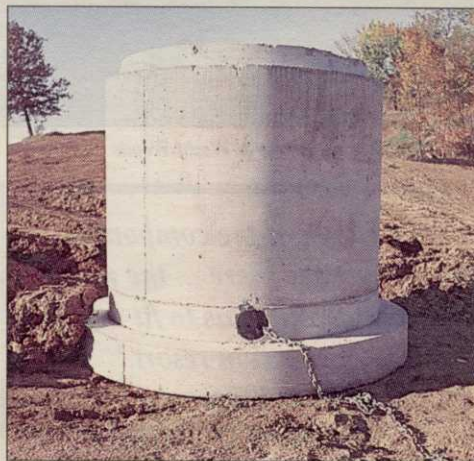
infrastructure set up and ready to go," he said.

FINANCIAL SUPPORT

Schreiner's next sales pitch will be to the Missouri Department of Conservation, area universities and a superintendents group to fund the testing at the Outlaw.

"This is the perfect study for master's degree-level students," he said. "We have brand-new greens. Nothing's been dumped on them. We've got them set up to be monitored. They're on a beautiful reservoir, built by the Corps of Engineers, and the course is built by the Clay County Parks Department."

Schreiner estimated the monitoring cost to be around \$10,000 a year. "That gets a half-dozen quality samples done," he said.



Basins like this have been installed at each hole at the Outlaw Course. Note the inflow hole at the top of the basin and outflow hole on the bottom of the other side. This allows a gravity flow over filtration material before the water leaves the site.

Morrish, Weiskopf opening Broken Top and Buffalo Creek

BEND, Ore. — The opening of the private 18-hole Broken Top course, in the shadows of the snow-capped Cascade range, is scheduled to take place Independence Day. The ceremonies will include a playing tour by Tom Weiskopf, who designed the course with partner Jay Morrish.

The course is the centerpiece of a new 2,000-acre community. Broken Top neighbors the massive Deschutes National Forest with spectacular views of the Three Sisters Mountains, Mt. Bachelor, and Broken Top Mountain, the dormant volcano after which the course and community were named.

In designing the Broken Top course, Weiskopf/Morrish showcased the varied terrain and scenery of the Central Oregon landscape. Integrating huge rock outcroppings, swales and forested lands, the 7,200-yard, par-72 course tests skill and strength, and promises the Northwest's premier golf experience in terms of beauty, course design and construction quality.

Meanwhile, Buffalo Creek Golf Club, a public-access layout in Rockwall, Texas, designed by Weiskopf and Morrish, will hold its official grand opening April 20.

The design, according to general manager Joe Cotter, produced "the highest quality championship course conceivable, and was developed to challenge the very best golfers while providing an enjoyable golfing experience for the average player."

Buffalo Creek is an upscale facility on the order of others of that concept emerging around the country, offering activities and services like those at private clubs.

Chris Rather is the course superintendent.

Garl designing first track in Detroit area

MILFORD, Mich. — Architect Ron Garl intends to move a lot of earth when he builds Prestwick Village Golf Club.

Garl, of Lakeland, Fla., will add character and definition to the 18-hole track which will be the centerpiece of a 425-acre residential community.

Course construction begins in September, with opening expected in mid-1995.

"This is my first course in the Detroit area and I'm excited about the possibilities with this intriguing site," which features gently rolling land, said Garl.

The project will include a 25-acre "state-of-the-art" practice facility.

Rivercliff GC adds 9

BULL SHOALS, Ark. — Construction is nearly complete on a nine-hole addition to Rivercliff Golf Course here — making the course the only 18-hole track in the retirement area around this community.

The Tee To Green Golf Course Construction Co. of Bedford, Texas, began work on the course last September, and TTG President Steve Hutchison said it should be completed around June 1.

Set in the hills of the Souther Ozark Mountain region, the course will have two natural blowing streams and two manmade lakes.

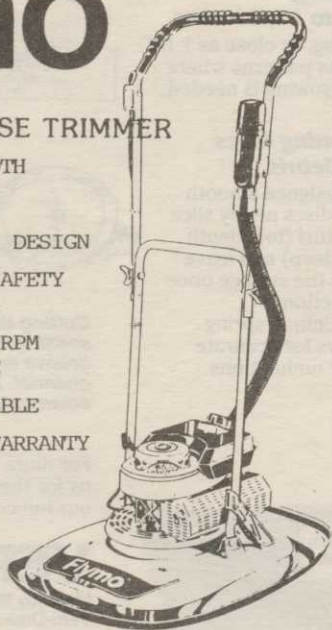
Four wooden bridges blend in with the hillsides at strategic places on the course.

Hutchison took extreme care to preserve the beauty of the rocks and trees of the area.

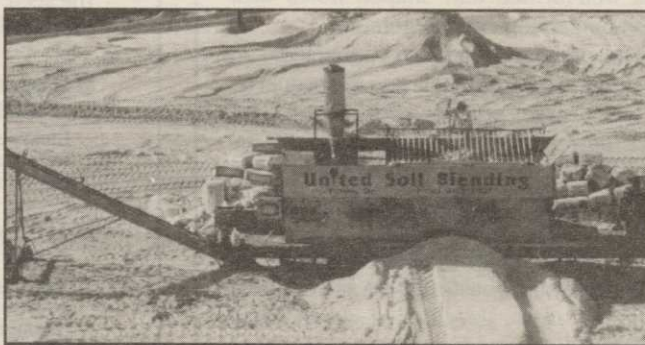
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Hills: Golf popularity increases need for practice facilities

Practice facilities are taking the pressure off golf courses by providing areas for golfers to improve their shot-making and for beginners to learn the game, according to Arthur Hills, president of the American Society of Golf Course Architects.

"Golfers who can't get a tee time can work on their game at practice facilities, which are usually more accessible than golf courses," said Hills. "In addition, golfers who don't have the time to play an entire round can practice putting, driving and many other shots even if they have less than an hour to spare."

Training centers provide an excellent opportunity for new players to learn the game in a relaxed environment.

"Practice facilities allow beginner golfers to learn and enjoy the game without the pressure of playing on the course," he said. "New participants also can learn the etiquette and rules of the game, which will make for a more enjoyable experience once they actually play a round on a regulation course."

DESIGN TRENDS

There are several types of practice facilities, including stand-alone driving ranges, extra holes on golf courses, and deluxe training centers that feature driving ranges, putting areas and bunkers. Upscale practice facilities often include such features as large practice tee areas, target greens, lesson tees and practice bunkers that should be considered independently and collectively when designing the project.

Large practice tee areas allow the golf course superintendent and golf professional to distribute wear over a larger area. Teeing areas are often one-half to one acre in overall surface area.

Target greens at designated distances from the teeing area are becoming more common. The greens help concentrate golf balls in the middle portions of the facility by providing the golfer with a visual target similar to those found on the golf course. Aesthetically, the greens can be dressed up with mound work and sometimes even sand bunkers.

Lesson tees are often designed as separate teeing areas at the end of the practice range or at the sides of the teeing area. If the lesson tees are located at the end of the range, an adequate buffer distance of approximately 350 yards (or greater) must be implemented.

Practice bunkers and practice greens are often implemented into designs by the golf course architect. Practice greens should be of ample size; 10,000 square feet plus is typically a desired surface area which allows for a variety of cup settings.

FACILITIES ADD VALUE

Practice facilities built in conjunction with golf courses help golfers

develop skills, while providing an excellent location for testing new equipment before purchase.

In addition, these facilities offer an excellent source of revenue for golf courses.

"The additional revenue generated through lessons and from the driving range can be used for capital improvements to the course," said Hills. "This helps keep it in good condition for the players."

Another advantage of on-course facilities is that they provide a

preview of the course.

"They offer a great way to warm up and groove the swing, especially for a player who might only play once every few weeks," said Hills, who believes training centers help speed play by developing better players. "Developing better golfers results in faster rounds, less waiting and increased revenues."

RANGES/LEARNING CENTERS

Driving ranges are usually free-standing, commercial facilities that

provide many of the same benefits as practice facilities on golf courses.

A typical driving range has 40 to 100 tees, requires approximately 15 to 20 acres of land and can accommodate hundreds of golfers each hour.

Taking the driving range concept a step further, learning centers offer golfers the opportunity to work on a variety of shots. As an example of an elaborate learning center, Hills cited the Man-O-War Golf Center in Lexington, Ky.

"The 30-acre project is designed to enable a golfer to work on every aspect of the game by providing a variety of shot-making challenges," said Hills. "It features a three-tiered driving range, chipping area, putting green, realistic target greens and golf-swing video analysis."

Practice facilities often include a separate green to practice chipping and bunker shots. Many are designed with bunkers enabling golfers to practice using their sand wedge.



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Floridians familiar with Browner appraise new EPA chief

Continued from page 1

director of the Florida Golf Council. "Her original impression of the golf industry was not good. She thought it was a frivolous game that wasted water and used too much pesticides.

"But she's a very dedicated person, a person the golf industry should view with an open mind. She definitely went through a transformation [in Florida]. I think towards the end of her tenure, she realized you can accomplish a lot more by working with all the

industries affected. Hopefully, she'll take that attitude into this new arena."

Bob Yount has sat through numerous meetings with Browner. Yount is executive director of the Orlando-based Florida Turfgrass Association, 38 percent of whose membership is superintendents.

"Generally, I think she was very realistic in her approach to protecting our environment," he said. "A politician? Yes. But a very practical person. If there's an opportunity to compromise, she is very receptive."



Carol Browner

Tom Benefield served as president of the Florida Golf Course Superintendents Association from 1991-92, during which time he saw a lot of Browner — usually concerning effluent issues. Browner wanted to charge golf courses for its use, and Benefield — the head superintendent at Ballen Isles Country Club of JDM in Palm Beach Gardens — led the fight against effluent charges.

"She sure is on a fast track," said Benefield, who noted the 35-year-old Browner was appointed

to DER by Gov. Lawton Chiles in early 1991, then worked on behalf of the Clinton ticket beginning in the fall of '92. "Generally speaking, she's a politician more than an environmentalist. An environmental politician, I should say.

"I don't think she saw golf courses in a very good light at the outset. She was very approachable for meetings, which was unusual. And we made some inroads with her and her staff. But some of that was political expedience and some of it was her staff.

"As with any huge bureaucracy, there's too much for one person to deal with. Carol relies heavily on an inner circle of people. If you educate the staff and reach out to the director, you can make a difference because the staffers don't like to be ignored."

What effect did she have on the golf industry in Florida?

Well, golf courses have not been charged extra for effluent use and Yount points to several golf course issues that elicited Browner's participation and support. For example, according to Yount, Browner opposed legislation that would have created a distinction between agricultural and recreation water use (though Brantley hinted this gesture was Browner's obligatory stance in a political trade-off).

Indeed, Browner has garnered nationwide praise for her tough, bartering stance on wetlands protection. She may be best known for her habit of demanding the preservation of wetland space in return for permit approvals.

"But there's one big problem with Browner's policy," said Steve Beeman, president of Ecoshores Inc., a wetland mitigation and creation firm located in Port Orange.

"She is more in favor of protecting existing wetlands as a tradeoff than the creation and mitigation of wetlands as a trade-off. When you take this approach, you've actually done nothing because those wetlands were already protected.

"It looks good, but you've saved nothing."

...

Do these Floridians have any advice for colleagues around the country who may have occasion to deal with Browner?

"I would tell them to have their facts in order, and present them in a logical manner," said Yount. "Across the board, she's very fair."

Brantley reaffirmed the virtue of patience, and added that Browner listens to her own people. "You have to be persistent, and you can't lose your temper," he said. "And it wouldn't hurt to find someone inside her department who will take time to understand and work with you."

Benefield agrees: "I think my advice would be to educate her staff. She listens to them."

Beeman disagrees: "I didn't find that to be the case. The staff people here [in Florida] were encouraged to be less believing of private sector scientists than the government scientists. And she encouraged that view."

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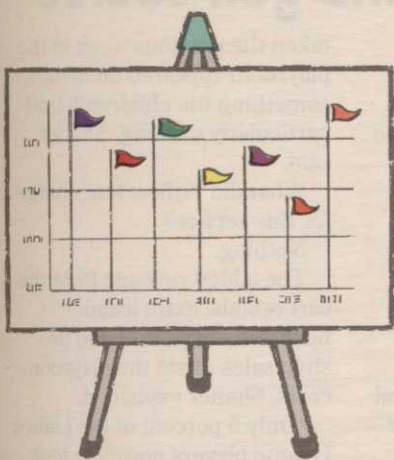
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BRIEFS



NAPLES NGC SECURES LOAN

NAPLES, Fla. — NationsBank of Florida and Naples National Golf Club, Inc. have announced the signing of a \$7.5 million loan agreement to complete the acquisition of the club's 320-acre property and the completion of its 18-hole golf course. This is the second accord between the two firms, following a \$1.75 million land acquisition loan completed in September of last year.

WORLD RESORTS RANKED

Nikkei Trendy, the Japanese magazine, has boosted Australia's golfing stocks by ranking Japanese-owned Sanctuary Cove Pines as the No. 2 resort in North and South America, Asia and Japan. The courses were ranked in terms of a challenging layout, price of golf and the standard of hotels, restaurant and clubhouse. Hawaii's Lagoon Golf and Racket Club was voted tops on a list which included Pebble Beach, La Costa Golf Course and Spa, South Korea's First Country Club, and Malaysia's Saujana Golf Course and Country Club.

LEE JOINS TERRA CEIA BAY GTC

PALMETTO, Fla. — Fru-Con Ocean Park Ltd. recently appointed Kimball E. Lee director of golf for Terra Ceia Bay Golf & Tennis Club. Lee is responsible for all golf course operations (including turf programs and maintenance) for Terra Ceia Bay's challenging 4,015 yard, Par 62 course. He is a member of the Professional Golfers Association and will also serve as the club's teaching professional and pro shop manager. Before joining Terra, Lee was Regional operations manager for five Florida golf courses for Golf Properties of Central Florida and Pinnacle Properties Manager, Inc.



Kimball Lee

NCA RELEASES REPORT

WASHINGTON, D.C. — The average dues paid to golf and country clubs for a family membership in the Northeast is \$3,776, compared to \$2,930 in the West, according to the recent Club Operations Survey, the National Club Association has announced. The Club Operations Survey covers key revenue and expense items, including dues, payroll and information on club restaurant and golf operations. Respondents who agreed to serve as part of an ongoing Information Group form a stratified sampling of NCA's membership nationwide. Participating clubs are reported by region.

Landmark auction set for July

By HAL PHILLIPS

NEW ORLEANS — An open cry auction is scheduled here in mid-July for the purpose of selling off the golf course properties formerly owned by the now-defunct Landmark Land Co.

The open cry format — the common, nod-and-wink style used in the art world — is one of the few details to be hammered out by the Resolution Trust Corp. and its advisor, Kidder, Peabody & Co. Whether the properties will be bid upon individually or in groups has yet to be determined.

However, the open cry format should

survive scrutiny, according to RTC spokesperson Anne Freeman.

"I don't see how this format would be offensive to anyone," she said. "With a sealed-bid format, nobody really knows what others have bid. This way, everyone knows where they stand."

The RTC's original proposal has already passed muster with Judge Falcon B. Hawkins' Federal Bankruptcy Court. Any proposal by the RTC, which has operated the six golf and resort properties since Landmark entered receivership in September 1992, must also be

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Photo courtesy of WeatherVector

Commentary

When lightning strikes... Are you liable?

By JAMES C. KOZLOWSKI

In recent months, I have heard some media reports and received some anecdotal information of liability associated with a golf course operator's failure to have a system in place to warn of approaching lightning storms.

As illustrated by the *Hames* decision described herein, such weather conditions would ordinarily be considered an open and obvious natural hazard. As a general rule, there is no legal duty to warn of such conditions which should be apparent

Dr. Kozlowski, JD, PhD, is counsel to the National Recreation and Park Association's Public Policy Division. This opinion originally appeared in Parks and Recreation magazine, and has been reprinted with permission of the author.

through the reasonable use of one's own senses, including approaching lightning storms.

Within this context, the law would require adequate warnings under limited circumstances wherein the landowner should be aware of a hidden or latent risk which recreational users would not be expected to know and appreciate. Accordingly, an adequate warning simply takes a hidden hazard and makes it open and obvious. Conversely, there is usually no legal duty to warn of natural conditions which are already open and obvious.

As noted by the court in this decision, customs, practices and usages in a field are indicative of the applicable legal standard of care. In this particular instance, the court

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Marketing Idea of the Month

Ladies' league grows with help of club daycare

By PETER BLAIS

PEWAUKEE, Wis. — Willow Run Golf Club took a lesson from the bowling industry to increase rounds, sales and profits.

Several players in the club's Wednesday morning Ladies' League wondered aloud one day why the club didn't offer a nursery area for young children, like the local bowling center.

Not only would a similar set-up at Willow Run make life simpler for them, they believed, it would probably attract more players who would love to join a golf league, but couldn't find daycare.

General Manager Kay Shaffer decided to do some research. She soon discovered how expensive it was to license and obtain insurance for a full-blown daycare facility.

Bowling centers were able to avoid those expenses by calling their area a *playroom* rather than *daycare*, Shaffer said. But a name change alone wasn't enough for the insurance company to forego added liability insurance requirements.

Bowling centers are able to avoid the added premiums since parents are on the premises. If a child gets hurt, the sitter goes to the front desk, finds out what lane the parent is using, and child and parent are quickly reunited. Easy.

But a golf course is far different. Instead of 30 lanes, a sitter would have to search 150 acres or more to find a parent. The *on premises* criteria is much tougher to meet.

After several months of research, the insurance company came back with a proposal. Require parents to use a golf car. Record the golf car number and what hole the parent starts on. If an accident occurs, the parent's whereabouts should be relatively easy to figure out and the cart would allow her to return quickly to the playroom.

Do that, the insurance company said, and Willow Run would meet the *on premises* requirement. No additional insurance would be needed.

Shaffer decided to give it a try. She hired a half-dozen employees, many of them existing staffers, to work in the playroom for 2-1/2 hours Wednesday

Continued on page 44

Club managers elect new board

NASHVILLE, Tenn. — The Club Managers Association of America (CMAA) has elected a new board of directors. The election was held at the association's 66th Annual Conference held here in late February.

Richard Kolasa, general manager of Skyline Country Club in Tucson, Ariz. will serve as president for 1993. Kolasa has been on the board of directors since 1987. A member of the association since 1978, he graduated from Michigan State University. William Schulz, general manager of Houston (Texas) Country Club of Houston, is vice president. Schulz has been on the board since 1988. A member of the association since 1974, he is a graduate of La Salle University and has attended several hospitality schools.

Secretary-Treasurer is Norman Spitzig, general manager of Fort Wayne (Ind.) Country Club. A member of the association since 1976, Spitzig has served on the board since 1989. He

Continued on page 49



A record 3,200 managers, spouses, students and exhibitors participated in the Club Managers Association of America's 66th Annual Conference and 16th Annual Exposition held Feb. 21-25, at the Opryland Hotel in Nashville, Tenn.

Golf marketers of the world unite; form WGMA

ORLANDO, Fla. — Formation of the World-wide Golf Marketers Association (WGMA), a professional trade association created specifically to enhance the marketing of golf products and services, has been announced from its new headquarters here.

Professional marketers who are involved in any aspect of marketing, selling, advertising and promoting golf to consumers and the golf industry can now come together in one professional network to study and enhance golf marketing.

Membership is open to all golf marketers, advertisers and advertising managers, sales and promotion executives, public relations profes-

sionals, creative directors, account executives, sales representatives, writers, photographers and any others with the challenge of selling golf to consumers or the industry.

The membership is available to marketers who are owners, developers, architects, retailers, resorts, travel media, clothing, accessories, equipment manufacturers, agents and management companies.

There are three classifications of membership: Associate, Professional and Corporate. Annual membership ranges from \$100 to \$500.

For more information contact Jim Castello, 407-321-6322.

Day care at the golf course

Continued from page 43

mornings. She provided them with first aid and CPR training.

Mothers were told to bring in two toys for each child and leave the toys during the league's 16-week run. The parents volunteered to supply snacks and refreshments on a rotating basis for all the children.

The club provided special lunches on league days. Typical was a hot dog or peanut butter and jelly sandwich. Pictures

taken the previous week in the playroom appeared on menus, something the children found particularly exciting, Shaffer said.

What did Willow Run charge for this service?

Nothing.

The added revenue from the cart rentals, extra league business, restaurant and pro shop sales offset the playroom costs, Shaffer explained.

"Only 5 percent of the Ladies League players normally took carts. Now most of them are doing it," she said.

Shaffer decided to run the club's junior league in conjunction with the Ladies League so that parents with older children could bring them to the club as well. When the junior league ended, participants were chaperoned to the playroom to wait for their parents. The youngest junior league member was 4-1/2.

How did members of the semi-private club respond to the influx of youngsters sharing their facility?

Some had reservations, Shaffer said. But the junior league emphasized course etiquette and rules, which relieved the concerns of many members. In fact, several offered to be instructors.

Juniors were also awarded points for activities like bringing Mom or Dad out for a round of golf or hitting a bucket of balls on the driving range. They could cash in their points at the end of the season for merchandise from the pro shop or food from the snack bar. That helped stimulate additional sales.

The program started in 1991. Twenty parents signed up for the Ladies League that summer. The playroom averaged 40 youngsters and the junior program an equal number.

Last year, 40 parents signed up. Fifty-six children frequented the playroom and 110 joined the junior program.

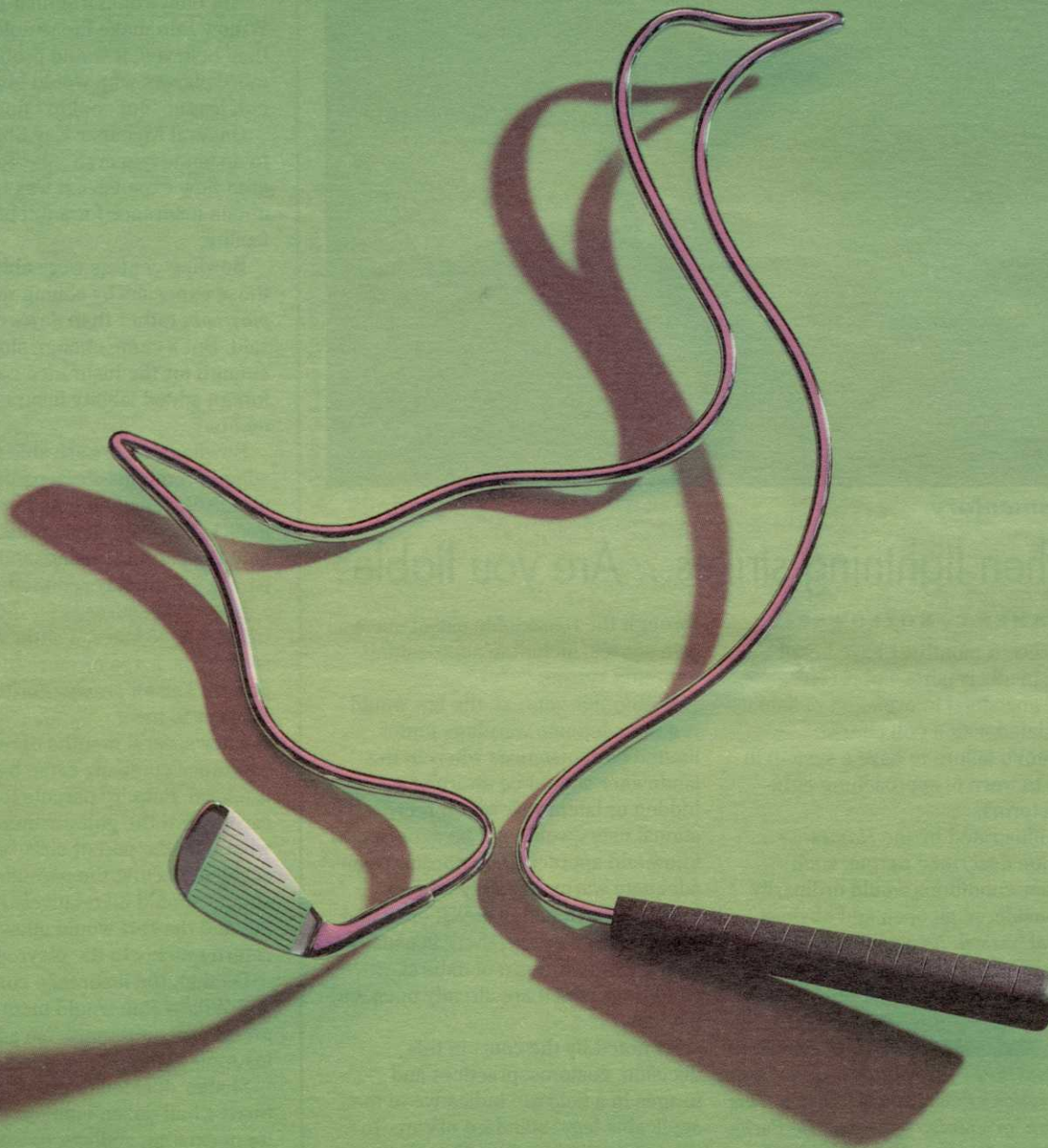
"We're hoping to double those numbers again this year," Shaffer said.

A small meeting room sufficed as a play area that first year, but would have been much too small considering the increased interest last year.

A temporary 60'-by-90' tent erected originally to house a weekend banquet became the permanent playroom. A 20'-by-20' carpet remnant placed at one end provided a play area for the younger children and a place to sit and watch Sesame Street.

"We never had to advertise the program. It was all word-of-mouth. You'd have to say it was pretty successful," Shaffer said.

Participants at last month's National Golf Course Owners Association annual conference agreed, voting it the winner in its Idea(r) Night competition.



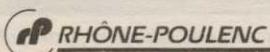
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Costly underground storage tank insurance may be superfluous

By PETER BLAIS

Municipal and county governments, airport authorities or other local jurisdictions — many of which operate golf courses with underground storage tanks — could be considered self-insured and save thousands of dollars annually in insurance premiums if they meet recently developed Environmental Protection Agency requirements, according to a federal environmental protection specialist.

The new ways of assuring local governments can cover clean-up costs or third-party damages resulting from leaking USTs were published Feb. 18 in the Federal Register. That means the oft-delayed deadline for meeting the financial requirements is now a year from that date, according to the EPA's Andrea Osborne.

The new measures offer tank owners an alternative to buying costly private insurance, which averages about \$3,000 annually for a facility with three to five USTs, Osborne said.

"If they [local governments] can use it [one of the new mechanisms], they would be more likely to self-insure," she explained. "You're just talking about a couple of hours of a city attorney's time to keep the appropriate records on file [as opposed to the cost of private insurance]."

The new mechanisms are:

- **Bond rating test.** General purpose governments, such as cities and counties, with outstanding issues of general obligation bonds rated by Standard & Poor's or Moody's as "investment grade" will be allowed to self-insure.

Special districts, such as school districts and airport authorities, that do not have the authority to issue general obligation bonds, may also self-insure if they have outstanding revenue bonds rated "investment grade."

To be eligible, local governments must have at least \$1 million in currently outstanding bonds.

- **Worksheet test.** A financial worksheet has been developed recognizing the unique financial structure of government entities. Governments with scores at or above a selected level can self-insure.

New EPA regulations may render municipal, county governments self-insured

- **Government guarantees.** A government can obtain a guarantee from its state or another local government with which it can demonstrate "substantial government relationship."

To serve as a guarantor, a local government must qualify using the bond rating or worksheet test.

- **Fund balance test.** Local governments may self-administer a UST response fund if appropriate safeguards are met.

Anyone interested in obtaining additional information should contact EPA's RCRA/Superfund Hotline at 800-553-7672.

The compliance date for local governments to meet their financial responsibility requirements — whether through one of the new measures or some other means — is Feb. 18, 1994, one year after publication of the new measures in the Federal Register. The 1988 Resource Conservation and Recovery Act required UST owners and operators to show

they could cover clean-up costs or third-party damages resulting from leaks.

The original mechanisms listed by the EPA to meet these requirements included a corporate test of self-insurance, letter of credit, surety bond, private insurance and a guarantee.

EPA soon discovered many of these mechanisms (e.g. the corporate self-insurance test) weren't appropriate for local governments. Consequently the federal agency pushed back the original date (Oct. 26, 1990) when local governments were supposed to comply with the financial requirements until the new measures were developed.

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CIRCLE #139

Aussies eye memberships Japanese-style

SYDNEY, Australia — The Japanese developers of a \$95 million golf course in Sydney's northern suburbs have applied to have memberships traded on the Australian Stock Exchange.

Terrey Hills Country Club is on schedule for its late-1993 opening. If approved by the Australian Securities Commission, it will be the first time golf club membership is traded Japanese-style on the stock exchange.

The developer, Terrey Hills Golf and Country Club Holdings Ltd., is 50 percent owned by Tokyo Dome, one of Japan's largest pleasure companies; 40 percent by Osaka-based Lansura Pty. Ltd., part of the Yamamoto Realty Group; and 10 percent by fashion company Sanki Shoji Co. Ltd.

Ron Stephens, the company's marketing manager, said it will cost more to join the Terrey Hills Club than any other in Australia. However, once the membership has been purchased, buyers will have the option of selling it — if the Securities Commission signs off.

Some of the 30 housing lots on and around the course will be auctioned off in November when the clubhouse is completed.

Hungerford to lead Golf Resources Management

DALLAS, Texas — John Hungerford has been named President of Golf Resources Management Inc., the golf course consulting subsidiary of Golf Resources, Inc., according to Chairman D.A. Weibring.

Hungerford joins Golf Resources from his previous post as general manager of Stonebriar Country Club, site of two annual professional golf tour stops—the Murata Seniors Reunion Pro-Am and the J C Penney's LPGA Ladies Skins Game.

Prior to heading the management and operations of Frisco, Texas-based Stonebriar, Hungerford was responsible for the development and operations of the 6,200-acre Stonebridge Ranch golf development.

Earlier, the Louisiana-native supervised construction, development and management of one of the most successful public golf facilities in the country, the Hyatt Bear Creek Golf Resort at the Dallas/Fort Worth Airport.

Golf Resources Management

also named Jim Fitzsimmons executive vice president of the firm.

Fitzsimmons most recently having served as general manager of Bentwater Country Club, just north of Houston. He also previously served as director of operations for Stonebridge Ranch.

Golf Resources, Inc., the parent company to Golf Resources Management, is active in the design and renovation of golf courses, management of country clubs and public golf courses, as well as agronomic consulting.

Marriott course portfolio grows to 19

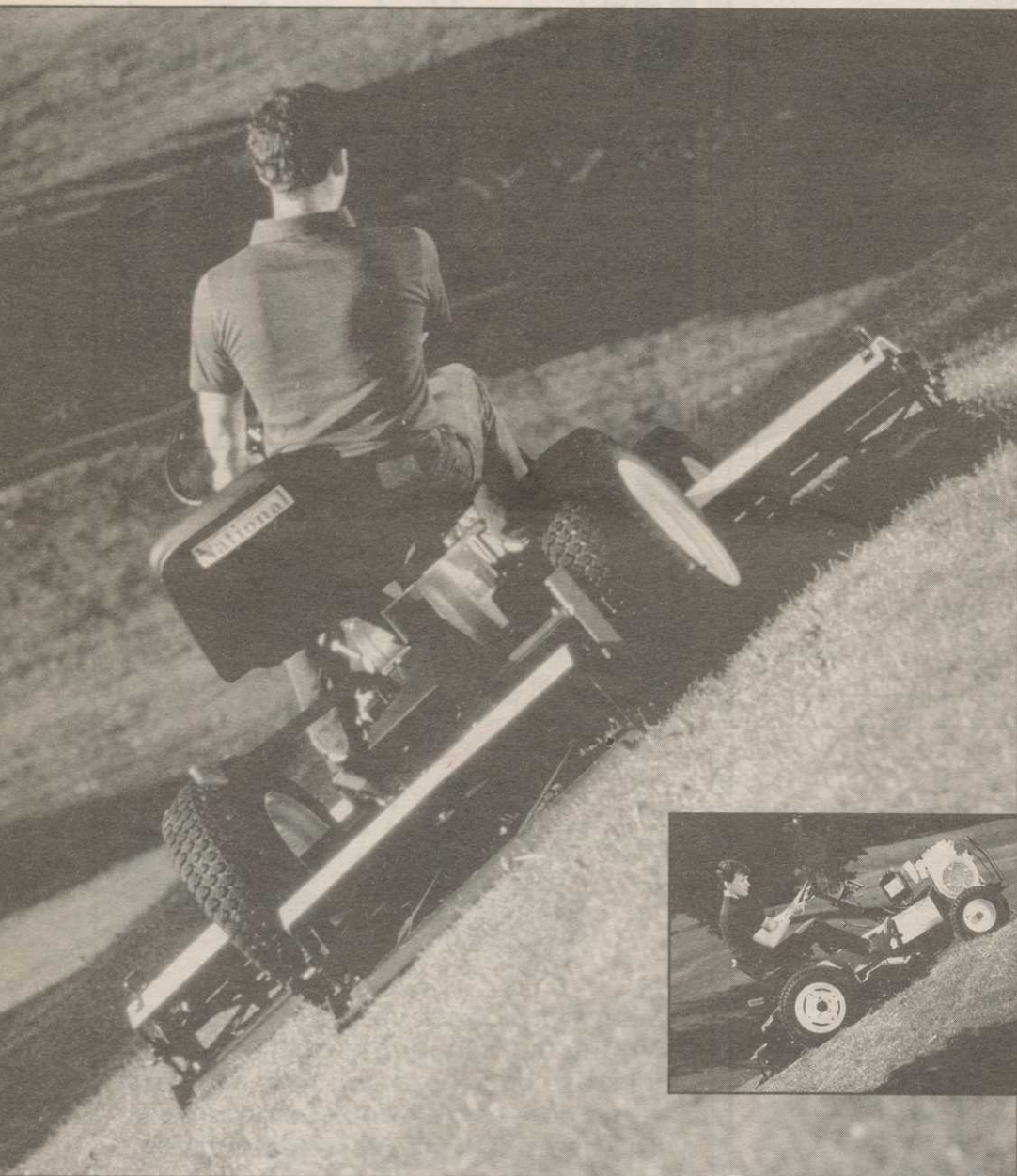
Marriott Golf Management Services has been named to manage the 18-hole Southridge Golf Course and members-only 36-hole Blackhawk Country Club. Blackhawk became the 19th in Marriott's portfolio of managed golf facilities.

Blackhawk consists of two 18-hole layouts surrounded by one of the most affluent residential communities in the U.S. Its Lakeside course is designed by Bruce Devlin and

Bob Von Hagge, it is rated one of the 10 most difficult courses in Northern California. Winding through the eastern end of the Blackhawk community is the Falls Course, designed by Ted Robinson.

The Southridge Golf Course, located within an hour's drive of Sacramento is designed by Cal Olson from Olson & Associates of Costa Mesa. The Southridge Golf Club is owned by Cal-Ontario.

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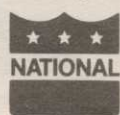
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CIRCLE #140

Irwin secures Links contract — the first client outside St. Louis

Irwin Golf Management has taken over management of The Links Golf Course near Denver, Colorado, marking the first management contract the company has undertaken outside of the metropolitan St. Louis area.

The 18-hole course is located in Highlands Ranch, a master-planned community south of Denver. "Because of our management experience and our other design projects in Colorado, we felt The Links was an excellent opportunity," said Richard Stahlhuth, Irwin Golf Management Chief Executive Officer. "It's a great fit with our other business." Stahlhuth added that Irwin Golf Management also has an ownership interest in the course.

"Improving course operations and conditions is our number one priority" said John Paul newly appointed Irwin Golf Management Vice President of Operations. "The area a number of areas where our expertise can add value to the facility and provide a more enjoyable course for all golfers."

The 18-hole executive course is a par 66. Irwin Golf will rework some of the tees, hazards and fairways on various holes, improve greens, and initiate a new maintenance plan. The restaurant and bar have been renovated and now offer an extensive menu with longer operating hours. The pro shop has been remerchandised with a complete array of golfing merchandise available to all golfers. An aggressive marketing and promotion plan is underway.

"Highlands Ranch is the fastest growing suburb in Colorado, so we're in a great market," Paul said. "With the improvements, The Links will be among the best golf courses in the suburban Denver area."

Current Irwin Golf Management Courses are Quail Creek Golf Club in St. Louis, Missouri, Lakeview Golf Club, St. Louis, Missouri, Cottonwood Golf Club, DeSoto, Missouri, Fourché Valley Golf Club, Potosi, Missouri and The Legacy Golf Club, Granite City, Illinois.

Former Kindred executives team up to form The Spectrum Organization

HOUSTON, Texas — Several former executives of Kindred & Co. have formed a new company, The Spectrum Organization, Inc., to provide planning, development, marketing and management services to the club industry.

Chairman Earl Felske, along with Spectrum's other principles, George Ebdon and Buzz Elton will office in Houston and Galveston, Texas.

"Together, we've been involved in the development of over 30 private and public access clubs since 1972, when we opened Marshwood Country Club for The Branigar Organization in Savannah, Georgia," Felske said. "Since then, we have helped to develop and provide start up operations for such clubs as Barton Creek

CC., in Austin; Ventana Canyon Golf Club in Tucson; Hallbrook C.C., in Kansas City; and Tampa Palms Country Club in Florida."

Spectrum currently manages a large resort project in Galveston and is in the process of negotiating contracts for clubs in Texas and Michigan. It recently appointed Cliff Cook as marketing manager for Florida and Georgia. Cook managed Lone Tree Country Club in Englewood, Colo. for Kindred & Co. until 1991.

Landmark auction

Continued from page 43

approved by its five-member executive council.

However, the open cry arrangement already constitutes a change from the original plan proposed by the Resolution Trust Corporation in February. The first plan called for a two-part auction calling for sealed bids one day and a comparative, out cry auction the next. But members at the six embattled clubs objected, asserting their own efforts to buy their respective properties would be thwarted under such a format.

Members at PGA West in La Quinta, Calif., raised the loudest hue and cry. According to James Gilstrap, who chairs the 1,230-member PGA West association, 98 percent of the membership has expressed interest in purchasing the four golf courses, two designed by Jack Nicklaus and the others by Pete Dye and Arnold Palmer. PGA West also includes more than 1,500 homes and land already zoned for a 1,000-room hotel.

Other properties up for sale come mid-June are 18 holes at Carmel Valley Ranch, Carmel, Calif.; 72 holes at Kiawah Island, S.C., including Pete Dye's Ocean Course; 54 holes, condos and estate lots at La Quinta Hotel Golf & Tennis Resort in La Quinta, Calif.; 54 holes at Mission Hills resort in Rancho Mirage, Calif.; and 45 holes at Palm Beach Polo and Country Club in Wellington, Fla.

The PGA West sale is complicated by the acronymical nature of its name. Both the PGA Tour and PGA of America have contracts with the club, giving each organization the right of first refusal concerning purchase of the property (The PGA of America's contract involves use of the PGA name, while the Tour's contract is valid because PGA West is licensed as a Tournament Players Club).

Even if the members at PGA West win control of the club, a battle for management rights to the club could ensue.

GOLF COURSE NEWS

Report: Only 16% of golf resort sales reps do 'adequate' job

In a research study soon to be released by the Golf and Travel Industry Association, most sales representatives of golf resorts received ratings that were "less than adequate" or "adequate" from the responding travel agencies. Only 8% of the travel agents rate the reps as "excellent" and 16% rated them as "adequate".

"One would expect that golf resorts would employ people knowledgeable about golf," stated Gary Schmidt, executive director of the Golf and Travel Industry Association and initiator of the study. However, the forthcoming report indicates many sales people representing golf resorts come from other areas of the hospitality

industry and undoubtedly focus on the more traditional sales techniques and information.

Also, according to Schmidt, it may be an indication that general managers of golf resorts underestimate the importance of golf as a property feature in the marketing of golf at the travel agency level. The study which covers nearly a dozen other issues relating to marketing golf travel through travel agencies is in final preparation stages and will be available to members and non-members of the Golf and Travel Industry Association. Copies may be purchased by contacting GTIA care of the above address. The price is \$95 for members and \$145 to non-members.



Camel courtesy of the Philadelphia Zoo.

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CIRCLE #141

When lightning strikes... Who's liable?

Continued from page 43

acknowledged that such golf course protective shelters and systems to warn of approaching adverse weather conditions was the exception rather than the rule, particularly in state park golf courses where this incident occurred. On the contrary, this decision cites testimony that rules promulgated by the United States Golf Association (USGA) for such systems "govern primarily tournament play and thus they are not

applicable here." As such, the *Hames* decision is another example from reported case law that the applicable legal standard tends to be lower than that espoused by safety engineers, risk managers and professional associations like the USGA.

In the case of *Hames v. State*, 808 S.W. 2d 41 (Tenn. 1991), plaintiff Rebecca Hames brought a wrongful death claim against the defendant State of Tennessee after her husband,

Philip Hames, was struck by lightning on a state park golf course. In 1989, the claims commissioner found in favor of the State, reasoning as follows that "there is no industry standard requiring storm shelters or warning devices and that common knowledge tells one that lightning is dangerous."

Finding that "the evidence preponderated against the conclusions of the Commissioner," the appeals court

reversed this determination and awarded the plaintiff \$300,000. According to the appeals court, "the State had notice of a dangerous condition established by the evidence not adhering to the rules of the golfing association, repeated requests for shelters by park employees before the incident, and the park manager's observation in an official memorandum that these deaths might not have occurred had shelters been available."

In addition, the appeals court rejected the State's contributory negligence defense, i.e. the

defendant's failure to look out reasonably for his own safety was responsible, in whole or part, for his death. In the opinion of the appeals court, "there was no evidence that the deceased possessed any particular knowledge as to the hazards of lightning on golf courses." Further, the appeals court found that "the State's failure to provide lightning-proof shelters, along with the lack of a policy to clear the course during thunderstorms, constitute the proximate cause of Phillip Hames' death." The State appealed to the state supreme court.

According to the state supreme court, the sole issue on appeal was "whether the absence of lightning proof shelters or devices to warn golfers of thunderstorms on a golf course owned and operated by the State of Tennessee, constitutes a negligently created or maintained dangerous condition: within the meaning of the state tort claims act. Specifically, the tort claims act provided for governmental liability for injuries caused by "negligently created or maintained dangerous conditions on state controlled real property." Under such circumstances, the tort claims act required claimant to "establish the foreseeability of the risks and notice given to the proper state officials at a time sufficiently prior to the injury for the state to have taken appropriate measures."

While acknowledging that "lightning is generally regarded as an act of God," Hames had contended in her wrongful death claim against the State of Tennessee that "the death was the result of the State's negligence in failing to erect lightning proof shelters or maintaining a warning system to vacate the golf course during electrical storms." The State responded that "the decedent died from dangers the risk of which he assumed, that he, himself, was negligent by seeking shelter under a tree on a hill, and that the death resulted from an act of God as opposed to actions (or inaction) taken by the State as owner and operator of the golf course."

As noted by the state supreme court, both Hames and the State were "in agreement that lightning is generally regarded by the law as an act of God." Applying the foregoing principles to the facts presented here, we are persuaded that there can be no recovery as a matter of law.

In addition, the state supreme court opined that "the risks and dangers associated with playing golf in a lightning storm are rather obvious to most adults."

The state supreme court, therefore, reversed the judgment of the appeals court and ordered that Hames' wrongful death claim against the State be dismissed.

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2-Tillers



4-5 Tillers

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Wiren receives course owners Award of Merit

ORLANDO, Fla. — Gary Wiren, a golf educator and a former national PGA staff director, received the National Golf Course Owners Association's Award of Merit at a luncheon in his honor at the NGCOA's recent annual monference.

The Award of Merit is given each year to recognize an individual or organization who has made a significant and long-term contribution to the game of golf and have made the game more popular.

A native of North Palm Beach, Wiren is a graduate of Huron College, has a master's degree from the University of Michigan, and a Ph.D. from the Univer-

sity of Oregon. He is a board member of the National Golf Foundation, American Junior Golf Association, and Children's Golf Foundation.

He has written or co-authored more than 160 magazine articles, seven books, has 13 film credits, and has taught golf to more than 250,000 people in 17 countries.

A master teacher at PGA National Golf Club, Wiren has received many golf awards, including the Joe Graffis Award for educational contributions to golf from the National Golf Foundation and the "Teacher of the Year" Award from the PGA of America

in 1987.

"Gary Wiren is simply one of the best people in our business," said Vince Alfonso Jr., president of the NGCOA. "He has made a tremendous contribution to the game and has a great feeling for the people who play golf. Through his seminars, books, and personal instruction he just might be responsible for helping more people get more fun out of this great game than anybody. He is a fine teacher and person. We are delighted to recognize him and provide him with our highest honor."



Gary Wiren

'Through his seminars, books, and personal instruction he just might be responsible for helping more people get more fun out of this great game than anybody.'

— Vince Alfonso Jr.,
NGCOA president



Among the 90 educational sessions held at the CMAA meeting in Nashville were presentations by the GCSAA and PGA of America. The 409-booth Expo sold out in November. Next year's event is in San Antonio, Texas.

Managers meet in Nashville

Continued from page 43

received a master's degree from Ohio State University and is a *magna cum laude* graduate of Boston College.

John R. Sullivan, general manager of the Grosse Pointe Yacht Club in Grosse Pointe Shores, Mich., is immediate past president.

Newly elected to the board of directors is Thomas H. Anderson, general manager of the Oahu Country Club in

Honolulu. Anderson joined CMAA in 1978 and has served as president for the association's Paradise of the Pacific Chapter in both 1980 and 1988. He received an associate's degree from Los Angeles Community College and has taken hospitality courses at Michigan State and Cornell University.

Re-elected to the board is Edward Henderson, general manager of The Columbia Club in Indianapolis, Ind.

Henderson has served on the board since 1990 and has been a member of the association since 1961. He is a graduate of the School of Hotel Administration at Cornell University.

John A. Jordan, general manager of Cherokee Town & Country Club in Atlanta, Ga., was also re-elected to serve as national director. Jordan has been a member of the association since 1965 and has served on the board since 1990. He received a bachelor's degree in hotel, restaurant and institutional management from Michigan State University.

Also re-elected to the Board is W.H. "Bill" Kendall, general manager of Woodmont Country Club in Rockville, Md. Kendall joined CMAA in 1969 and has been a member of the board since 1992. He received a bachelor's degree from Oklahoma State University in hotel and restaurant management.

Remaining on the board of directors are: Wiggo K. Anderson, general manager of the Riverchase Country Club in Birmingham, Ala.; George P. Carroll, general manager of the Town & Country Club in St. Paul, Minn.; Jay DiPietro, general manager and vice president of Boca West Country Club in Boca Raton, Fla.

Also, Randall A. Gudanowski, general manager of the Indian Trail Club in Franklin Lakes, N.J.; and Paul K. Skelton, general manager of Troon Golf & Country Club in Scottsdale, Ariz.

THE GLEANER: a core plug pusher



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SPECIFICATIONS

1. Two section blade will follow the contour of any golf green or tee.
2. Three-inch foot pad coming off blade helps catch and push plugs off greens and tees.
3. Unit will not damage green because of articulation of blades and foot pad area on bottom.
4. Blade width is 72 inches.
5. All heavy gauge metal.
6. Weight is 70 pounds.

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 - ★ There is no cheaper product in the industry to remove your plugs from the green or tees. One use and it pays for itself!
 - ★ Other core-plug removal equipment might take two hours to install. Model TP installs in five minutes.
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PKF report: Number of members fell 1 percent; dues increased 6 percent

Continued from page 1

percent a year ago, as opposed to the double-digit hikes of recent years.

Meanwhile, the recession has slowed membership growth. The average number of members fell 1 percent in 1992, compared to a 1.4 percent increase the year before. Dues increased 6 percent, down from the 7.3 percent jump in 1991.

Rising costs and falling memberships have left club manag-

ers in a monetary squeeze.

"In response to a difficult financial environment, managers have had to cut payroll costs by eliminating waste. They have held back on raises, limited new hires and occasionally eliminated positions," said PKF Consulting Director John Crow, who presented the Country Clubs 1992 Flash Report at February's Club Managers Association of America Annual Conference in Nashville, Tenn. Course supplies, contracts

and other expenses rose faster than payroll costs, but not as much as in past years, Crow added.

As a result of their frugality, managers were able to cut their clubs' average net loss in half from \$21,000 in 1991 to \$10,500 in 1992.

"The good news is clubs have reduced their losses. The bad news is they are still losing money," Crow said.

"Many clubs were set up as not-for-profit operations. But

you have a lot of [private] facilities that were supposed to make money that aren't."

The short-term economic outlook gives managers little chance of further reducing their losses, Crow said. If anything, the red ink is likely to flow more freely.

Having cut about all they can, few financial efficiencies remain, the PKF consultant explained.

"If you start cutting back on the quality of the golf course, it makes it even more difficult

to sell memberships," Crow said.

Memberships are likely to remain flat as the economy slowly improves. A soft market will make it more difficult to raise dues than it was a year or two ago, he said.

Inflation will continue to drive operating costs up somewhat. But even more ominous are the payroll- and energy-related bills Congress is considering, Crow explained.

"New taxes will force up the price of petroleum and anything that is petroleum-based, which is the case with many course chemicals," Crow said.

Proposed legislation to reduce the deduction for business meals from 80 percent down to 50 percent would hit hard at food and beverage revenues, which already dropped 1 percent last year, Crow noted.

Many clubs have reduced their dining room service to further cut costs. Others have allowed outside play on their courses and created new membership classes to add revenue.

The silver lining might be the fact that little new private club development has taken place recently because of the difficulty developers are having obtaining financing.

"If the economy starts to improve, members will begin stepping up to the plate again," Crow predicted.

The full *Clubs in Town & Country* report should be available this summer, Crow said. In response to managers' demands, the survey should grow to 300 to 400 country clubs, up from the 250 sampled last year.

Past reports have concentrated on member-owned country clubs. Reflecting the changing marketplace, the 1993 survey will include more real estate developments and management company-operated facilities, Crow said.

The new clubs will undoubtedly change the figures compared to past years. But breaking them into more categories will allow readers to "compare apples to apples," he added.

Because of the additional clubs, the report will cost somewhat more than the \$50 charged a year ago, Crow said. Copies will be available by calling PKF at 404-842-1150.

KEMPER, AMERICAN GOLF SQUARE OFF IN CHICAGO

CHICAGO — American Golf Corp. and the Kemper Lesnik Organization are vying for the right to manage the golf courses contained in Chicago's Park District. Chicago-based Kemper appeared to have the inside track before citizen groups cried foul, claiming the process was not put out to open bid. In jumped AGC, which is based in Santa Monica, Calif. A decision is due any day.

GOLF COURSE NEWS

Super Rake Q

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1 New "Q" Means Quiet.

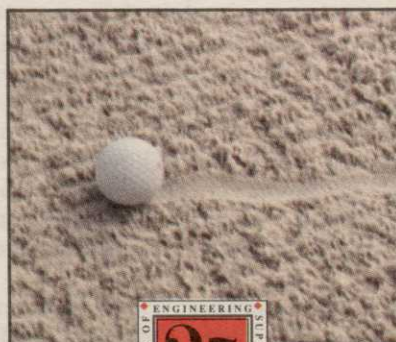
Super Rake Q is now powered by a new, super quiet, Vanguard 16 hp engine, with extra noise-dampening insulation.

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Patented twin rake system utilizes a new pre-rake to create extra firm trap finishes. (See photo.)

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Select from Vanguard 16 hp gasoline engine or optional 12.5 hp Kubota water-cooled diesel engine.

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We think so. Our competition thinks so, because they copy ours. Look at it now—The Super Rake Q.

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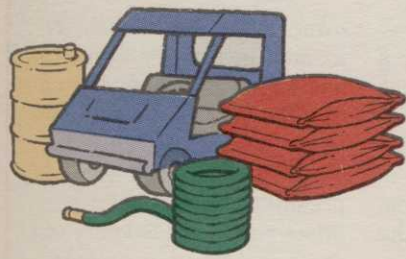
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CIRCLE #145

BRIEFS



INNOVA FILES CHAPTER 11

DENVER — Innova Corp., the North American distributor for Isolite water-retention products, has filed for protection under Chapter 11 of the Federal Bankruptcy Code. The case was filed in Denver on Jan. 21, 1992. Innova distributed Isolite on behalf of the Japanese firm, Sumitomo. Isolite is a porous, ceramic granule used on golf courses as a water-retention agent in soil. In addition, Innova had recently begun to explore the areas of horticultural landscaping and environmental clean-up via bioremediation.

HIGGINS JOINS PENNINGTON

MADISON, Ga. — Dr. Jeff Higgins has joined the management team at Pennington Seed, Inc. Higgins will head up Pennington's new product development department and will serve as director for lawn and garden chemicals, fertilizers, and soil products. Higgins received M.S. in agronomy and soils from Auburn University. He earned his PhD in agronomy from Clemson University.

SCHLABACH MOVES UP AT FMC

PHOENIX, Ariz. — Retha Schlabach has been named director of advertising and retail development at Farmers Marketing Corp. Schlabach has been with FMC since 1989, when she represented its advertising agency. Later the Ohio native was hired to form FMC's in-house advertising department. Her first project in her new position is placing Global Green Brand Primavera Bermudagrass in the retail market.



Retha Schlabach

GRISWOLD PROMOTES CHARLET

IRVINE, Calif. — Mark Charlet has been appointed Griswold Controls' sales & marketing manager for the irrigation division. Charlet has been with Griswold Controls for six years and has been associated with the development of many new products. Prior to joining Griswold, Charlet owned and operated a landscape construction and maintenance company for seven years.

THREE NEW REPS FOR AQUA MASTER

Aqua Master Fountains and Aerators of Kiel, Wis., has added three sales representatives. Sandpiper Sales of Winter Haven, Fla., will handle the southeastern states of Florida, Georgia, Alabama, North Carolina and South Carolina. Prinson Sales, Inc. of Tigard, Ore., will handle Oregon, Washington, Idaho and Alaska, plus British Columbia and Alberta, Canada. The states of Texas, Oklahoma, Arkansas and Louisiana will be covered by Cliff Brown and Associates of Garland, Texas.

Irrigation Association settles on San Diego

SAN DIEGO, Calif. — The Irrigation Association has decided when and where the world's largest irrigation show will be held this year. The IA will conduct the 1993 International Irrigation Exposition and Technical Conference from Oct. 31-Nov. 3, at the San Diego Convention Center in San Diego, Calif.

Of the 450 booths available for the 1993 Expo, more than 300 have been sold to irrigation companies around the country based on a priority point system which the association instituted years ago.

The association is also implementing a number of new marketing plans which are expected to increase show attendance. Among other things, the association has lowered registration rates by 30 percent and will be kicking off an expanded advertising campaign this month. The IA will be promoting the show at allied shows throughout the year and will shortly launch a direct mail campaign with distributors, contractors, dealers, specifiers, users and governmental agencies. Promotional material has been sent to U.S. embassies around the world and advertisements will be placed in a variety of international trade publications.

The IA Expo is the largest exposition in the world that is devoted exclusively to irrigation products and services. For more information about exhibiting or for more information about the program, call the Irrigation Association at 703-524-1200.

...

Because there is no national association or society which represent the interests of the drainage industry, the IA is forming a drainage division.

Continued on page 52

Trencher inventor gains Hall of Fame

LAS VEGAS — Ed Malzahn, president of the Charles Machine Works Inc., was among the first 12 inductees to the new Construction Equipment Hall of Fame. The induction ceremony was held here March 19, in conjunction with the industry trade show, ConExpo.

Malzahn and his father designed and developed the first service-line trencher in the late 1940s. Today, the Charles Machine Works, manufacturer of Ditch Witch equipment, produces more than half the world's service-line trenchers, as well as other underground construction products.

The Hall of Fame is a non-profit institution dedicated to recognizing the most significant contributions to the construction industry. Announcement of inductees was made by Michael J. Porcaro, vice president and publisher of *Construction Equipment* and *Construction Products* magazines, sponsors of the Hall of Fame.

NEW PRODUCT OF THE MONTH



The 4th green at Palos Verdes Country Club, now equipped with the TurfTemp system.

Man-made warmth for turf deprived of natural sunlight

By HAL PHILLIPS

PALOS VERDES, Calif. — Tucked in and around the rolling hills south of Los Angeles, Palos Verdes Country Club constitutes one of those hidden gems, a product of noted designer George Thomas who's also responsible for a couple of tracks called Riviera and L.A. Country Club.

There was only one problem at PV: The 4th green. Situated at the lowest point on the course and surrounded by towering Monterey pines, the putting surface received virtually no sunlight during the winter months and limited air movement all year around.

Reduced to what the members called "quick dirt," the green had to be rebuilt in 1988 and again in 1992. However, last year the powers that be at Palos Verdes decided to equip the green with TurfTemp, a soil temperature-control system from BioTherm

Hydronic Inc., of Petaluma, Calif.

The results?

"Anytime you can control the growing temperature on a green, it's going to help," said Scott Young, head superintendent at PV. "We've seen our soil temperatures go from 39 degrees to the mid-50s; color has improved; and our clipping count is up compared to our other greens because of the increased leaf growth."

In Palos Verdes' case, TurfTemp worked this way: Tubing was placed in an even array across the green and connected to special manifolds hidden below the skirt. The choker layer of sand was added, followed by 12 inches of root-zone mixture. The supply and return lines were then connected to the heat module discreetly located away from the green. A water mixture circulates through the system and multiple soil

Continued on page 57

EPA signs off on Ciba-Geigy's Primo

GREENSBORO, N.C. — The Environmental Protection Agency (EPA) has registered Primo, a turfgrass growth management tool for use on golf courses.

The Ciba-Geigy Corp. product, which has been tested by golf course superintendents under and Experimental Use Permit (EUP) for the past two years, will now be available nationwide.

Primo may be used on all major warm- and cool-season turf species, including bahiagrass, common and hybrid Bermudagrass, centipedegrass, St. Augustinegrass, zoysiagrass, creeping bentgrass, Kentucky bluegrass, red/tall fescues, and annual/perennial ryegrass.

Primo is designed to temporarily inhibit turf plants'



More new products, page 58

production of gibberellic acid, which determines cell elongations and internode length. This makes each plant thicker and denser, which enhances the appearance, health and playability of the entire stand.

"Several hundred superintendents participated in our 1992 EUP program," explained Bernd Druebbisch, Primo product manager. "Their results were instrumental in helping us refine our EPA label."

Based on 1992 EUP results, Ciba-Geigy lowered application rates for golf course fairways, while maintaining the standard of 50 percent growth reduction for four weeks.

Jake has new distributor in Michigan: Valley Turf

GRANDVILLE, Mich. — Valley Turf Inc. of Grandville has announced it will distribute Jacobsen professional turf maintenance equipment in western and northern Michigan.

Valley Turf President Ron Brink and the officers of the company currently own a 27-hole golf course near Grandville, and that experience gives them first-hand knowledge of what it takes to be successful in the golf course business, said Brink.

"We're going to represent

Jacobsen in this area with a very reputable, grass-roots organization," Brink said. "Our business will always have an emphasis on service and parts.

"We're just very pleased to be involved with Jacobsen. It's the top of the line in turf maintenance equipment. And with the financial arm of Textron involved in the financing of equipment and courses, we feel we have all the tools customers demand."

John Wiersema is Valley Turf vice president and Scott Vroon is

director of parts and service. Ray Holloway is the head service technician.

According to Brink, one of Holloway's duties will be to conduct product service seminars on Jacobsen equipment for the benefit of golf course personnel.

Valley Turf is headquartered at 3721 28th St., Grandville, Mich., with a branch office at 237 S. Cedar St. in Kalkaska. For more information on Valley Turf services, call 616-532-2885.

Cartrol purchased from Invisible Fence

WEST CHESTER, Pa. — Cartrol Enterprises Inc., a newly formed company, has announced its purchase of The Cartrol Division from the Invisible Fence Company.

Cartrol Enterprises will continue to market Cartrol, the patented golf cart control system. It will also distribute the firm's line of flexible hazard markers, known as InBounds. Both are available nationwide.

John J. Purtell, principal

owner of the new company, co-founded Invisible Fence in 1979 and served as its president until 1992. Former Cartrol Company Managing Director, Gregg T. Gipp, will serve as president of Cartrol Enterprises and Karen Rakoczy will serve as marketing director.

Cartrol Enterprises can now be reached at 1-800-793-2278 or 215-430-7845. Its address is 602 Brandywine Parkway, West Chester, Penn., 19380.

Irrigation Association

Continued from page 51

Mike Fallon, vice president of the Drainage Division for National Diversified Sales (NDS), agreed to help lead the group through the fledgling stages. The first official meeting will be held at the 1993 IA Expo and Conference in San Diego.

"Right now, there is no much in the way of education in drainage," Fallon explained. "There have been big developments in products and techniques. Everything is becoming more and more sophisticated. Contractors, distributors and even suppliers need to be kept up with all the changes."

Anyone interested in the new drainage wing of IA should call Fallon at NDS: 1-800-726-1994.

...

PROVO, Utah — The IA, in conjunction with the U.S. Bureau of Reclamation, will hold a **Landscape Irrigation Auditor Training course, here on May 13.**

Co-sponsors of this one-day seminar include: the Utah State Division of Water Resources, Utah Association of Nurserymen and Landscape Contractors and Utah/Idaho Chapter of the American Society of Landscape Architects.

The seminar is designed to teach water auditors how to save their clients water and money through improved irrigation system management techniques. Attendees will learn how to measure the delivery capabilities of irrigation systems with special emphasis given to the calculation of turfgrass water requirements. Concepts such as sprinkler distribution uniformity, efficiency and precipitation rates and station flow rates will also be covered.

The fee for the one-day course is \$150 for members of the Irrigation Association, the Utah Association of Nurserymen and Landscape Contractors and the Utah/Idaho Chapter of the American Society of Landscape Architects and employees of the Utah State Division of Water Resources and the U.S. Bureau of Reclamation. The fee for non-members is \$195.

For more information about the course or registration information contact the Irrigation Association at 703-524-1200.

GOLF COURSE NEWS

To cut operating costs, take a look at your overhead.

Profit-oriented course managers keep one eye on the bottom line and one eye on their golf car battery chargers. That's why more and more of them are putting the Lestronic II in their car barns.

Lestronic II was designed for today's lighter, more efficient golf cars. It saves money regardless of fleet size by prolonging battery life, delivering more range per charge and reducing energy costs. The Lestronic II:

- ▶ **Preserves battery life** due to the patented electronic timer. Get the proper charge every time. There's no overcharging for longer battery life. No undercharging for more range per charge.
- ▶ **Uses 10 percent less AC power** to recharge a battery that is 75 percent discharged.
- ▶ **Fully automatic**, eliminating operator error—just plug it in.
- ▶ **Runs cooler and quieter.**
- ▶ **Carries UL and CSA approval.**

Plug into the many benefits for the Lestronic II and watch what happens to your overhead.



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CIRCLE #146

biosys buys AgriSense

PALO ALTO, Calif. — biosys has announced the signing of a letter of intent to purchase Fresno-based AgriSense. AgriSense was formed in 1988 as a joint venture between subsidiaries of Phillips Petroleum (Provesta Corp.) and Dow Corning to commercialize insect detection, monitoring traps and other biological control technologies.

The acquisition was expected to be completed by the end of March, and includes the AgriSense European subsidiary, Biological Control Systems. Both divisions develop and market pheromone-based products for control of pests in high-value crops, retail, cockroach detection and stored products.

According to biosys product Manager Adrienne St. Marie, a pheromone-based product has been developed for cutworms. Commercial release is anticipated sometime in early 1994.

biosys will compensate the partners with a combination of cash and common stock. Other terms of the transaction were not disclosed. The acquisition is subject to various contingencies, including completion of due diligence review and execution of a definitive purchase agreement.

AgriSense has been commercializing products based on technologies contributed by the joint-venture partners. These include Phillips Petroleum's pheromone synthesis technology, which disrupts the mating behavior of insect pests, and Dow Corning's micro encapsulation/slow-release technology which was developed for pheromone trap and lure applications.

Insect pheromones in traps and for disruption of mating are predominantly used for the non-toxic detection, monitoring, and control of insects in agricultural fields and orchards. Timely detection and monitoring allows the use of insect control measures at the optimum time and assists in the adoption of integrated pest management (IPM) practices aimed at minimizing the use of pesticides.

"We were impressed by the market share that AgriSense has achieved in Europe and the patented technology available for manufacturing pheromone active ingredients," said Dr. Venkat Sohoni, biosys president and CEO. "This pest control method is environmentally responsible and complements our existing nematode-based biological insecticide products. The acquisition provides us with a European base for marketing, field research and distribution."

Acquiring AgriSense would expand biosys product offerings beyond insect control to encompass detection and monitoring products for both commercial and consumer markets.

C-LOC moves to larger Michigan facility

UTICA, Mich. — Larry Berger, president of C-LOC Retention Systems, Inc., announced his company has moved to a larger office facility, allowing C-LOC to improve its response time in processing orders, providing technical assistance and product information to customers.

Responsible for coordinating inside sales activities and working with field sales representatives is Michelle Fett,

who also handles customer service. Development of marketing plans and programs which include advertising, news releases, producing sales literature and technical bulletins is handled by Tyson Marketing, Inc., a marketing consulting firm located in Plymouth, Mich.

C-LOC markets PVC plastic sheet piling, which is manufactured in two configurations, corrugated and trapezoid.

Hyundai combines sales, distribution

SANTA ANA, Calif. — Hyundai Golf Cars U.S.A. its sales and distribution headquarters to Santa Ana, Calif., here in Orange County

"The move to Orange County was promoted by the rapid expansion of our dealer base," according to Edward Bannigan, vice president and division manager.

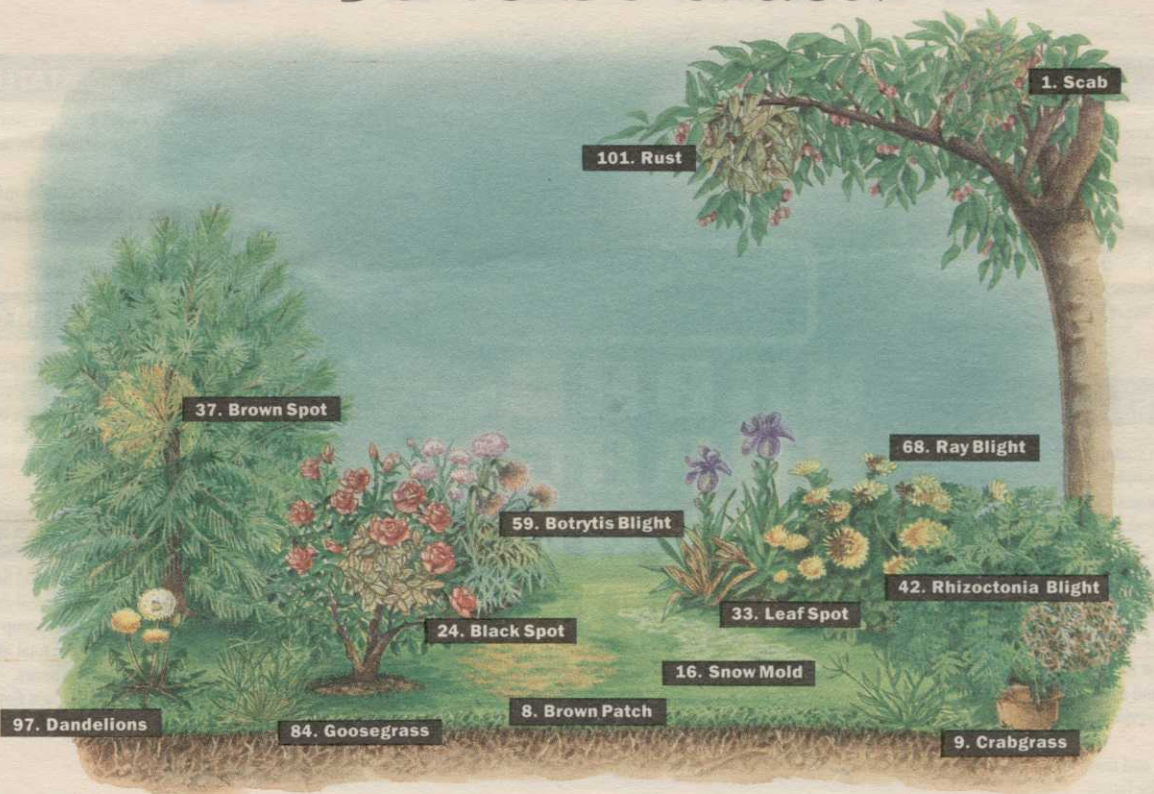
"We've recently appointed additional sales managers headquartered in Georgia, Michigan and California. Our strengthening national network requires conveniently located distribution, ser-

vice and management, and we felt that Orange County was ideal."

Hyundai's move from its San Diego County facility to the Santa Ana office was designed to assure the golf car manufacturer better communications, as the California branch and national warehouse are now combined.

Both entities can now be reached by calling 714-556-6342; or writing Hyundai Golf Car Division, 2117 S. Anne St., Santa Ana, Calif. 92704.

Use the Turf Care® Pros for any number of growing problems. 138 to be exact.



Professionals count on the Turf Care Pros. To treat diseases, Daconil 2787® fungicide is the cornerstone of your management program. The broadest-spectrum fungicide on the market, it controls 18 disease-causing organisms on turf and 55 major ornamental diseases. And there's never been a documented case of disease resistance to Daconil 2787.

For pre- and post-emergent herbicide control of annual grasses and broadleaf weeds, it's Dacthal® and Daconate® 6. On pesky broadleaf weeds, use 2 Plus 2.



Always follow label directions carefully when using turf chemicals.

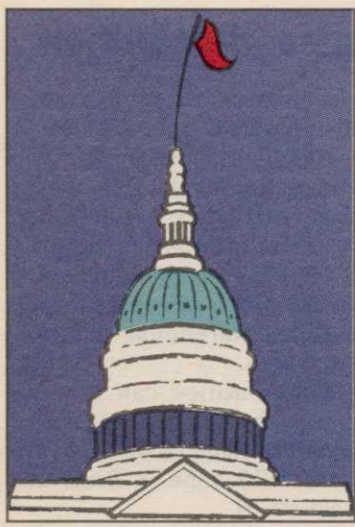
*Roundup is a registered trademark of Monsanto Company.

And round out your program using Frigate® with Roundup® to control perennial and annual weeds. Together with Daconil 2787, they all create a complete professional management program.

When it comes to turf and ornamental care, count on the Turf Care Pros. And count out labeled diseases and weeds — 138 to be exact.

ISK Biotech Corporation, Turf & Specialty Products Division, 5966 Heisley Road, P.O. Box 8000, Mentor, OH 44061-8000.

® Registered trademark of ISK Biotech Corporation.



Seven new RISE members; total stands at 83

The ranks of RISE (Responsible Industry for a Sound Environment) have swollen by seven in recent weeks.

Joining the not-for-profit trade association representing the specialty chemical industry for the current fiscal year are the Associated Landscape Contractors of America, Monterey Lawn and Garden Products Inc., National Railroad Contractors Association, Northeast Vector Management Inc., Orkin Pest Control Company,

Pro Magazine/Yard & Garden Magazine, and SSIU Mobley Company Inc.

The total RISE membership now stands at 83: 18 manufacturers, 16 formulators, 17 distributors and 32 associate (non-voting) members, of which *Golf Course News* is one.

Names & Faces: Jan Novak, vice president of Monsanto's Residential Products Division, has replaced David Duncan as the firm's

official RISE representative and Governing Board member... Tom Perkins, business manager of Turf and Ornamental Products, has replaced Ken Bakshi as American Cyanamid's official representative and board member.

Dates & Places: The next meeting of the RISE Governing Board will be held June 2, in Maumee, Ohio... Expect registration materials for the RISE Annual Meeting to arrive sometime

in June. The 1993 Meeting will return to the Ritz-Carlton Tyson's Corner Hotel in McLean, Va., Sept. 10-13. General sessions will be held on Sept. 11-12, with the banquet Sunday night.

Legislative Update: The RISE Government Issues Committee has established Western and Southern subcommittees to better serve the association's needs in these regions. Under the leadership of Ciba-Geigy's Jeff Case, three symposiums were held during March in Texas, North Carolina and Florida, while Monsanto's Frank Plescia led a similar program in Sacramento, Calif. ... David Crow continues to provide reports on current federal legislative and regulatory activities, particularly updates on the possibility of Reid/Lieberman lawn care hearings... Allan Noe, the director of NACA State Affairs, is now assisting the coverage of state affairs for RISE.

Signage: For tradeshow booths, RISE member signs are available free for the asking on a first-come, first-served basis. RISE also has a limited supply of C&P Press "Turf and Ornamental Chemical Reference" customized with the RISE logo. If you're interested in receiving a copy, call Elizabeth Lawder at 202-872-3860... Incidentally, there is currently a trademark pending for the RISE logo. Be sure to refer to the organization as "RISE (Responsible Industry for a Sound Environment)". No periods, and "RISE" is printed *before* the spelled-out version.

ASPA booklet now available

Selling turfgrass and its benefits to the environment just became easier, thanks to a new 20-page booklet.

To help them begin to gear up for a strong spring sod sales season, ASPA members were sent a sample of the new EPA publication, as well as a descriptive order form detailing all of the sod-selling materials available through the organization. Fliers such as, "Turf Installation Guide," or "Why Are Most Lawns Now Sodded," are widely used by ASPA members at home and garden shows, while "Tech Sheets," and the "Contractor Estimator for Turfgrass Sod and Seed Installation" have been effectively used with landscape contractors and home builders.

Sod producers are able to personalize most of the fliers with local printers adding company names, address and logos. Some members apply either stickers or even a rubber stamp imprint to let people know how to order sod from them.

Orders should be placed with the ASPA office at 708-705-9898.

Get Pumped with OTIS*

DATA ENTRY KEYS

- Full access to all programmable logic controller (PLC) registers. Provides easy method for user to change setpoint pressure, lock-out times, ramp up speed, fertigation times, and much, much more. Register numbers are listed with English synonyms for ease of understanding.

EVENTS

- Displays last 128 pump station events with time of occurrence. For example; Pump A started at 2:32 AM. Pump A stopped at 3:05 AM.
- "Snapshot" of pump station performance immediately preceding an alarm condition. Flows and pressures are recorded second by second for the previous 60 seconds, and minute by minute for the previous 30 minutes.
- Data logging. Pressure and flow profiles are recorded for future review. Up to 7 days data can be stored.

STATUS

- Set point pressure, actual pressure, flow, and motor RPM.
- Alarm condition(s) showing flow and pressure at time of occurrence.

ALARM INFO

- Detailed instructions on the encountered alarm with possible reasons for the occurrence and steps to take to correct problem and reset the alarm.

DAILY LOG

- Daily and total flow.
- Daily and total number of individual pump starts.
- Daily and total individual pump running hours.
- Daily highest flow with time of occurrence.

*Operator Terminal Information System

OTIS is standard equipment on all flowmeter equipped Flowtronex pump stations. It allows you to easily monitor and change your pump station performance, and provides you with the valuable information you need to do your job more effectively. Built in data logging records flow and pressure profiles for up to 7 days for your later review! A printer port allows direct connection of a printer for hard copy monitoring of pump station.

All of this without any expensive phone lines or communication cables.

Only from the technology leader---Flowtronex International!

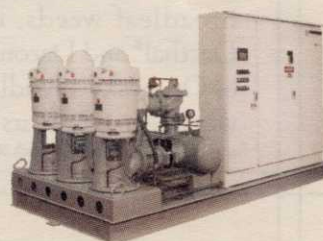
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FLOWTRONEX
International

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Best Sand Corp. affected by parent firm's reorganization

CHARDON, Ohio — The parent company of Best Sand Corp., a supplier of sand and top dressing material, has announced its organization into business groups. The company, Fairmount Minerals, Ltd., also serves the foundry, glass, abrasives and filtration media markets.

According to Fairmount Minerals President Charles D. Fowler, creation of the business groups — Industrial Sand, Manufacturing, Distribution, Research and Technology, Corporate Services and Santrol — will allow the company to better meet the needs of its customers and use the abilities of its employees.

The new structure is also intended to pave the way for orderly growth and expansion while improving the company's position in the marketplace. Each group will be managed by a company vice president.

Best Sand, Esco Sand, Wedron Silica Co. and the Bridgman Lake Sand division of TechniSand, Inc. are part of the Industrial Sand Group. This group focuses on production, sales and marketing of sand for golf course, sports turf and industrial use and is managed by Jeff Fallon, who is based at the Wedron (Ill.) Silica facility.

The Manufacturing Group includes TechniSand, Inc., Fairmount Abrasives and Wedron Flux and is the responsibility of Peter Hoyt who manages the operations, sales and marketing of these three subsidiaries. Hoyt is based in Chardon.

Managing product distribution for Fairmount Minerals as well as other producers and manufacturers is the focus of the new Distribution Group. This group is also responsible for furthering the success of Uni-West, Inc., a recently acquired foundry supply company with locations in Seattle, Portland and Denver. Led by Robert Groves, who works out of the Wedron office, a portion of this group's time will be devoted to investigation additional growth opportunities.

The Research and Technology Group, under the leadership of Daryl Hoyt, concentrates on meeting the technical needs of the company, its customers and the industries it serves. Hoyt is based in Wedron.

Under the guidance of Jack Wymer, also in Wedron, the Corporate Services Group encompasses Accounting, Human Resources, Transportation, Total Quality Process, Technical Support and Engineering.

The Santrol Group, based in Houston, will coordinate the sales and marketing of coated and uncoated proppants to the frac industry. It will function under the leadership of Jason Renkes.

Kelty named vice president of technology and operations at O.M. Scott

MARYSVILLE, Ohio — Dr. Michael P. Kelty has been promoted to vice president, technology & operations of The Scott Company. Prior to his promotion, Kelty was vice president, research & development. In addition to his previous responsibilities for research, development, engineering and quality assurance, Kelty will assume direction of fertilizer manufacturing, seed packaging and corporate purchasing. A member of the National Agricultural Chemical Association and the Solid Waste Compost Council, Kelty earned his PhD in biology from Ohio State University and his

bachelor's in biology and chemistry from John Carroll University.

...
R. Michael Webb has been appointed to the position of vice president, business development at Scotts. He assumes his new responsibilities after holding the position of vice president, manufacturing and logistics since 1988. He was vice president of operations at Hyponex from 1979 until the company was acquired by Scotts in 1988. In his new position, Webb will direct growth of Scotts composting services, as well as other new business ventures. He will maintain his

involvement with acquisitions, including the recently-acquired Republic Tool and Manufacturing. A member of the National Bark and Soil Producers Association, he received his B.S. from Texas Tech University.

...
Kenneth Fritz has joined Scotts to assume the position of vice president, logistics & operations. He will assume direction of distribution, logistics and regional products plant operations. Fritz joins Scotts after 25 years of working for Nestle Foods Corp. in Purchase, N.Y., where he served as VP of corporate quality beginning in 1990.

Purchase A Cushman Turf-Truckster® And Get A Second Year Of Warranty FREE!



Offer Ends May 31, 1993

The Cushman Turf-Truckster—the world's leading turf work vehicle—is now a better value than ever. That's because we're offering a FREE two-year warranty program.

Purchase a Turf-Truckster between February 1, 1993, and May 31, 1993, and we'll extend your warranty coverage for a second full year—absolutely FREE. That's 12 extra months of covered protection at no extra cost—that's VALUE!

PROGRAM DETAILS

1. Warranty offer applies to retail customers purchasing new 1992 or 1993 model year Turf-Truckster vehicles and Turf Master sprayers (Models 898530, 898532, 898630, 898632, 898633, 898634, 898535 and 898635) between February 1, 1993, and May 31, 1993.
2. The completed product warranty registration form must be postmarked within 15 days of original purchase and no later than June 15, 1993.
3. Offer good at participating Ransomes America Corporation dealerships in the U.S. and Canada only.
4. Other restrictions may apply. See your dealer for complete details.

For a free demonstration call 1-800-228-4444. We'll give you the name and location of the nearest Cushman dealer. FAX (402) 474-8522.

4214 Ransomes America Corporation, 7900 West 78th Street, Suite 105, Minneapolis, MN 55439
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CUSHMAN
Driven to be the best.

Seed Research of Oregon honors Superintendents of the Year

Alan Andreasen, CGCS, has been named Seed Research of Oregon's Golf Course Superintendent of the Year for his work at The Cypress Club in Los Alamitos, Calif.

Seed Research awards this honor to the nation's superintendent who best defines the professional spirit while implementing imaginative management techniques.

Andreasen, who is now superintendent at El Niguel Country Club near Mission

Viejo, Calif., received his honor at last January's 64th annual International Golf Show and Conference in Anaheim.

Andreasen was responsible for construction supervision and grow-in at the Perry-Dye designed course which fea-



Alan Andreasen



Dean Graves

tures SR 1020 creeping bentgrass greens, hybrid Bermuda fairways and tees, as well as buffalograss roughs.

...

Seed Research has also recognized Bethesda Country Club as its Golf Course of the

Year. This award recognizes the new or renovated golf course that best combines a thoughtful, playable design with an imaginative, success-oriented approach to maintenance. The honor was bestowed on superintendent Dean Graves and American Society of Golf Course Architects President Arthur Hills, who has overseen the club's three-year green renovation at Bethesda, home to the Mazda LPGA Championship.

Fine Lawn secures exclusive right for Supranova Poa

LAKE OSWEGO, Ore. — Fine Lawn Research, Inc. has been granted the exclusive rights to grow and distribute Supranova Poa supina on the North American continent. This cool-season species was discovered by a German plant breeder on Alpine trails, and is now used widely in Europe.

Supranova has been used in Munich, Germany's Olympic Stadium since 1972. Its characteristics are well adapted to specific situations on golf courses as well. It exhibits exceptional wear.

Trials performed in Germany indicate that this alpine grass performs very well in maintaining a groundcover in as much as 40 per cent shade. In a shade planting in Canada, it was the only species that established itself and filled in to form a turf.

Farm organizations seek input on Clean Water Act

WASHINGTON, D.C. — A total of 21 farm and agribusiness associations have joined to issue a consensus Statement of Principles to be used as guidance for Congress in addressing agricultural non-point source pollution in the Clean Water Act debate.

The statement will be forwarded to members of Congress and legislative staff involved in the reauthorization of the Clean Water Act (CWA).

The principles call for:

- Coordination of CWA programs with water-quality programs in other federal, state and local law;
- Recognition that non-point source pollution problems vary with local, site-specific conditions, and a call for the current Section 319 program to be strengthened with better management and funding to allow for local solutions to be implemented; and
- CWA resources must be targeted to priority areas where water bodies are threatened or impaired and based on reliable, scientific data. Educational and technical assistance must be made available to farmers through state and local agencies.

"This Statement of Principles represents agriculture's commitment to be part of the solution to our non-point source pollution problems," said The Fertilizer Institute President Gary D. Myers.

GOLF COURSE NEWS

Generous 9 gallon capacity.

Accepts common bag liners for no-mess emptying.

Available in red, green or black.

Extra tough, polyethylene plastic won't dent or rust.

Three "Snap-On" lid choices; see below.

"Cans Only" lid takes recycling to task at the collection point.

Solid construction keeps trash out of sight.

Drain holes in the bottom, of course.

Show 'em Where to Stick It ... With "Trash Mates" Recyclers.

You're looking at the most convenient, cost efficient, environmentally friendly way to handle player-generated waste on your course.

Trash Mates get players to separate their cans right on the course — so you don't have to later — thanks to the restricted opening in the snap-on, "Cans Only" lid.

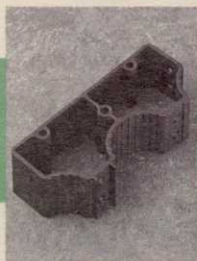
A second Trash Mate handles the rest of the trash — over 9 gallons of it. And, they accept common bag liners for quick, no-mess emptying.

Contact your Par Aide dealer today. Order Trash Mates for your course. They'll enhance your image as a conscientious turf manager and a friend of the environment.



CIRCLE #150

More Mounting Versatility Than Any Other Trash Container . . . By Far!



Unique, Universal Mounting Brackets Offer Many Choices:



Two Trash Mates Center-Mounted on a 2" Pipe



Two Trash Mates Offset-Mounted on a 2" Pipe



One Trash Mate Single-Mounted on a 2" Pipe



One Trash Mate Mounts on Any Vertical Surface



Three Lid Choices: "Cans Only", Large Trash or No Opening

Par Aide Products Company • 3565 Hoffman Rd. East • St. Paul, MN 55110 • 612-779-9851

Valent USA forms professional products group

WALNUT CREEK, Calif. — Valent U.S.A. Corp. has established a new group to focus entirely on sales of the company's professional products. These products — Orthene Turf, Tree and Ornamental spray, Orthene PCO and Dibrom Concentrate insecticides, Tame 2.4 EC insecticide and miticide, Sumagic plant growth regulator, Triforine EC fungicide, Deadline bait and X-77 spreader — are used on golf courses, in nurseries and greenhouses.

"Building an experienced marketing and sales team to focus solely on Valent's professional products will enable us to best meet the needs of this specialized group of customers," explained Valent's Business Manager for professional products, David Whitehead. "We will be devoting 100 percent of our attention to this business."

Whitehead said Valent will continue research efforts both to improve its current line of products and to develop new ones.

TurfTemp System

Continued from page 51

sensors — located below the green surface — send information to the electronic soil thermostat located at the heat module.

Young is new to Palos Verdes. In fact, he wasn't on board until after TurfTemp had been installed. Nonetheless, he appreciates the technology he inherited from his forerunner, Reed Carpenter.

"I came on in August [1992], so I wasn't here for the actual laying of the project," Young explained. "But I just fired up the boiler in November and we've had great responses. The green looks great."

"It was a constant problem for Reed. It got so cold and thin in the winter months, it was just bare. If they have to rebuild the green every three years, this thing [TurfTemp] pays for itself."

According to BioTherm president Jim Rearden, TurfTemp varies in cost, depending on the harshness of climate. However, Rearden said the system runs between \$3 and \$5 per square foot.

With the Palos Verdes project up and performing, BioTherm has now installed two such systems, the other being the 5th green at Pebble Beach. Rearden noted that his company is "talking to Riviera" about installing a system there.

BioTherm offers a free engineering service to help golf courses and/or architects determine the best way to apply the TurfTemp system. BioTherm can be reached by calling 1-800-GET-HEAT.

The professional products group will be managed by Whitehead, while Allen Smith serves as product manager.

Both men will work out of Valent's Walnut Creek, Calif. headquarters. Sales representatives include James Barr, Dover, Del.; Peter Blum, Boca Raton, Fla.; Clarke Hudson, Orlando, Fla.; Pamella Knoepfli, Sparks, Nev.; and Tom McCarter Jr., Irving, Texas.

Whitehead, Smith, Barr, Blum

and Hudson have been with Valent in previous sales positions. Knoepfli previously was a distribution sales representative for horticultural products with Western Farm Service Inc. For nine years, McCarter worked for Las Calinas Landscaping in Irving, most recently as internal operations coordinator.

Valent headquarters can be reached by calling 510-256-2700; or writing P.O. Box 8025, Walnut Creek, Calif. 94596-8025.

DowElanco enhances safety campaign

Turf and ornamental businesses can receive spill response materials, personal safety equipment and issues management guides free of charge through the DowElanco "Responsibility Comes First" product stewardship program.

By purchasing DowElanco products, businesses earn points they redeem for safety items available in the program.

Nearly 250 safety products

were ordered during 1992, including spill response kits, spill response stations, personal safety kits, decontamination kits and *Right-to-Know* Books along with "When a Crisis Strikes" videos. This year, in addition to the above items, participants can make donations to research and trade associations with the points they earn. For more info, contact your local DowElanco sales rep or distributor.

NO MORE HEAVY BACKPACKS.

How The Nomix System Works. This revolutionary weed control system covers a lot of ground — nearly every municipality in the U.K., the grounds of Windsor Castle and championship golf courses the world over to be exact. And now, it's complete line of unique applicators and herbicides are being made available in the U.S. The Expedite now features an upgraded head and spiral disc for greater flexibility. With the addition of the Compact and a full-range of four new herbicide formulations, over 90% of the U.S. markets' needs will be met. The unique features of the Nomix system include:

NO MIXING.

Our unique oil-based formulations require NO MIXING. These formulations are pre-mixed herbicides ready for use in a snap. That's right — just snap in a cartridge and you're ready to go.

NO CHEMICAL CONTACT.

The re-sealable packaging eliminates chemical contact and venting.

The Nomix system is safer for you and the environment.

NO DIFFICULT CALIBRATION.

Correct calibration saves you both time and money.

The Nomix system uses pace tones, charts and formulas that make calibration easy.

NO HEAVY BACKPACKS.

The weight of conventional backpacks can be unbearable.

Just one Nomix cartridge covers the same area as this exaggerated backpack!

NO DRIFT.

Studies show the Nomix System produces up to 40X LESS DRIFT than conventional methods.

Less drift equals less exposure — again, the Nomix system is safer for you and the environment.

NO RUNOFF.

Our unique oil-based formulations actually adhere to the leaf's surface longer and provides faster absorption of the chemical into the weeds. NO RUNOFF means a more accurate and faster method of eliminating weeds.

NO WEEDS!

That's what you ultimately get with the new Nomix System — NO WEEDS!

Call 1-800-48NOMIX for a Nomix distributor near you.



The Nomix Compact is the most versatile lance in the Nomix product line. Remember...Just one Nomix cartridge (shown here) covers the same area as the backpack to the left!



The weed control system for all your needs.

CIRCLE #151

NOW AVAILABLE:

A full range of Nomix products to meet all your needs — including 3-Way Broadleaf and Grass & Weed Plus, the Glyphosate Oryzalin product you've been waiting for!

Hose repair

The Hoseomatic Division of Integra Capital is introducing a new series of Hose Repair Kits tailored to the needs of golf courses. Each kit includes the company's patented field crimp tools and hose ends.

These easy-to-use crimpers make deep, secure connections on all types of hose including hydraulic, power steering, air, spray, water and more. The kits include steel, heavy duty storage trays.

For more information call 1-800-292-4673.

CIRCLE #201

New rotary from Ford New Holland

A new, 72-inch rear-discharge three-spindle rotary mower deck is available for Models CM272 and CM274 commercial mowers from Ford New Holland. The rear discharge lets operators cut close to obstacles on either end of the deck.

Clippings are distributed across the width of the cut area to avoid "rowing" or build-up. The high-lift blades provide clean, efficient cutting. Also,

deck baffles can be adjusted to provide additional recutting for "mulching". The reduced particle size lets the clippings settle down through the grass, out of sight and out of mind. It also handles grassed medians without throwing clippings onto adjacent areas.

For more information, call 717-355-1261; or write Ford New Holland at 500 Diller Ave., New Holland, Pa., 17557.

CIRCLE #202

Ready-to-apply wetting agent

OVERLAND PARKS, Kan. — Kalo, Inc., has announced introduction of an advanced formulation of its ready-to-apply wetting agent, Hydro-Wet RTA. Hydro-Wet has been used successfully on golf course greens and fairways for more than 20 years, and is still available.

New Hydro-Wet RTA Advanced Formula is designed to be 15 percent more effective in reducing surface tension than original RTA. By reducing the tendency of water molecules to resist one another and bead up, Hydro-Wet

RTA enhances water infiltration into the soil. Packaged in five-gallon poly jugs with levered faucet, Hydro-Wet RTA is designed for use with the Pro-Ap liquid siphoning applicator.

Hydro-Wet Advanced Formula is applied at a rate of 8 oz./1,000 square feet, with a repeat application recommended. In addition to 5-gallon jugs, Hydro-Wet RTA is packaged in 30-gallon drums and 55-gallon drums.

For further information, call 913-491-9125.

CIRCLE #203

Verti-Trac joins Verti-Drain family

KINGSTON, Pa. — Charles Otto, head of North American sales for the Verti-Drain aeration system and Verti-Seed overseeder, has announced the introduction of a unique turf maintenance vehicle, called the Verti-Trac. It's designed to combine power, maneuverability and durability to help turf professionals maintain top-quality golf course conditions.

The Verti-Trac contains a Kubota engine. Although it was originally developed for golf greens, and expanded to tees and fairways, the Verti-Trac can be used for virtually all sportsfield and maintenance applications. For more information on the unit, call 717-288-9360.

CIRCLE #204

Oscillating greens roller from CTT

ARNOLD, Pa. — Cultural Turf Technologies, Inc., a Western Pennsylvania marketer of golf course maintenance products, has introduced its newest greens roller, The Turfiron GreenRoller.

The GreenRoller oscillates back and forth, side to side, across each green and its powerful 5.2 hp engine can achieve rolling speeds of 1,000 square feet in 1.5 to 2 minutes. It is equipped with three rollers, one drive roller and two steering rollers. All three are 38-inches in length with the diameter of the drive roller at 6.5 inches, and the diameter of the steering rollers at 4.5 inches.

Information can be obtained by calling 412-337-1944; or writing CTT at 1331 Fourth Ave., Arnold, Pa. 15086.

CIRCLE #205

Grounds software

LABB Systems/Software, publisher of computer software for the grounds maintenance industry, has added Trims MSDSPlus, an IBM PC compatible computerized library of Material Safety Data Sheets for Turf and Ornamental Chemicals, to its product line. For further info, call 1-800-733-9710.

CIRCLE #206

Tee to Green-Six Keys To Successful Turf



Look to Our Complete Product Line to Lock out Your Troubles with Turf

For full information on the products of your choice, please fill out the coupon and return it to:

NOR-AM Chemical Company

c/o Jayson Associates, 6 Mt. Vernon St. Suite 249, Winchester, MA 01890

NOR-AM
NOR-AM CHEMICAL COMPANY

Specialty Products Division
A Schering Berlin Company

- | | |
|---|---|
| <input type="checkbox"/> BANOL® Fungicide | <input type="checkbox"/> PROGRASS® Selective Herbicide |
| <input type="checkbox"/> PROXOL® Insecticide | <input type="checkbox"/> TURCAM® Insecticide |
| <input type="checkbox"/> NITROFORM® Slow-Release Nitrogen | <input type="checkbox"/> NUTRALENE® Controlled-Release Nitrogen |

I am a: ☐ golf course superintendent ☐ lawn care professional ☐ Other _____
Please Print Clearly

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

GCN

CIRCLE #152

Golf Course Marketplace

To reserve space in this section, call Simone Marstiller, 813-576-7077

ADVERTISING INFO.

ADVERTISING RATES FOR 1993

	2X	6X	12X
Per col. inch:	\$60.00	\$55.00	\$40.00
Add-on per 1/4":	\$15.00	\$13.75	\$10.00
Logo incl. in ad:	\$30.00	\$30.00	\$30.00

- Rates are per insertion.
- Minimum 2-time insertion.
- Prepayment is required.

Send prepayment & ad copy to:
GOLF COURSE NEWS
7901 4th St. N., #311
St. Petersburg, FL 33702
813/576-7077, Fax 813/579-9788

EMPLOYMENT

HEAD GREENSKEEPER

Recently build Southwest 18-hole RV resort golf course looking for head greenskeeper. Must have overseeding experience. Bilingual. Able to work & supervise Native American & Hispanic employees. Send resume to: **Ott-Knott, Inc., P.O. Box 327, Fairfield, WA 99012.**

WANTED

Experienced golf course shaper. New construction & renovation experience. Send resume to:

**P.O. Box 1422
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The *Landscape Restoration Handbook*, a joint publication from the United States Golf Association and the New York Audubon Society, is due to be released May 14.

The *Handbook* is designed to be a comprehensive guide that demonstrates how to use naturalization as an alternative to more intensive management of landscape.

It explains how to obtain the following benefits of natural landscaping or ecological restoration projects: water quality improvement, erosion reduction, lower maintenance, chemical reduction, ecosystem and ecological community protection, and plant and animal species diversity.

The book also provides an extensive list of scientific and common plant names associated with ecological communities throughout the United States. Plant characteristics covered in each listing include plant type, environmental tolerance, aesthetic codes, wildlife value, color, bloom time, and landscape uses. It also contains a list of nurseries throughout the U.S.

The 650-page book also includes a four-color map displaying ecoregions.

The *Handbook* can be obtained by writing Lewis Publishers, 2000 Corporate Blvd., NW, Boca Raton, Fla., 33431; or calling Lewis at 1-800-272-7737; or calling the USGA at 1-800-336-4446.

TURF TIPS FROM JACKLIN

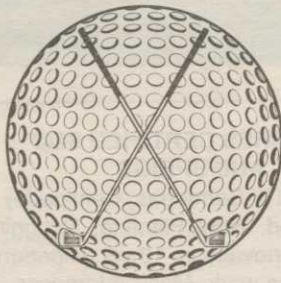
Jacklin Seed Co. of Post Falls, Idaho, has published a series of *Turf Tip* updates to complement its *Turfgrass Technical Manual*. The *Turf Tips* are designed to fit in the manual behind the troubleshooting tab page. These supplements provide additional information designed to answer questions related to turf problems in your particular region. If you wish to receive *Turf Tips*, or you haven't yet received the *Turfgrass Technical Manual*, call Jacklin at 208-773-7581; or write Jacklin Seed Co., West 5300 Riverbend Ave., Post Falls, Idaho, 83854-9499.

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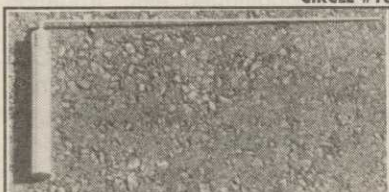
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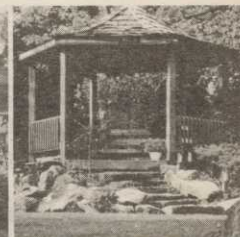
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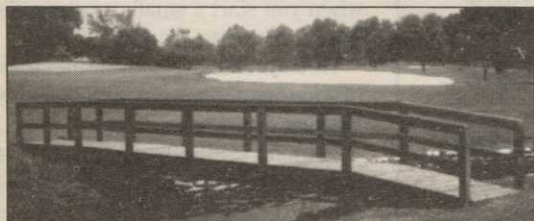
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13 — USGA Northeastern Region Seminar in Rochester, N.Y. Contact 203-456-4537.

15 — USGA Green Section Mid-Atlantic Region Conference in Pittsburgh. Contact 215-696-4747.

23 — Fla. Coop. Extension Service seminar on Insects that Feed on Shrubs and Trees. Contact Uday Yadav at 407-323-2500 Ext. 5559.

27 — USGA Western Region Seminar in Seattle. Contact 714-457-9464.

May

12 — North Carolina Turf & Landscape Field Day at North Carolina State University in Raleigh.

June

10 — Mass. Cooperative Extension Service seminar on Identification and Management of Hyperodes Weevil and Black Turfgrass Ataenius in Concord. Contact Mary Owen at 508-831-1225.

* — For more information or to register, contact the Golf Course Superintendents Association of America education office at 800-472-7878 or 913-841-2240.

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Lemons cools off hot spots — for everyone

By MARK LESLIE

Hand watering — the bane of a superintendent's existence — is a thing of the past at some golf facilities — courses that have bought the Wetting Fork.

"If used primarily for 'hot spots' on greens, I can look at cutting my [treatment] time probably four times over," said Brian Holland, superintendent at Stonehenge Golf Club in Fairfield Glade, Tenn.

Holland is one of the first to buy the new invention from fellow superintendent Jerry Lemons of Old Hickory Country Club in Hermitage, Tenn.

The Wetting Fork, with six-inch-long tines mounted on an 18-square-inch platform, connects to ordinary water hoses. The tines are pressed into the earth and, under 20 to 400 pounds per square inch of pressure, ejects water that saturates an area in 10 seconds.

"I normally would use two people hand-watering in the summer months about every day for four to six hours, depending on the temperatures," Lemon said. "Now, one man spends about three to four hours every other day touching up the spots."

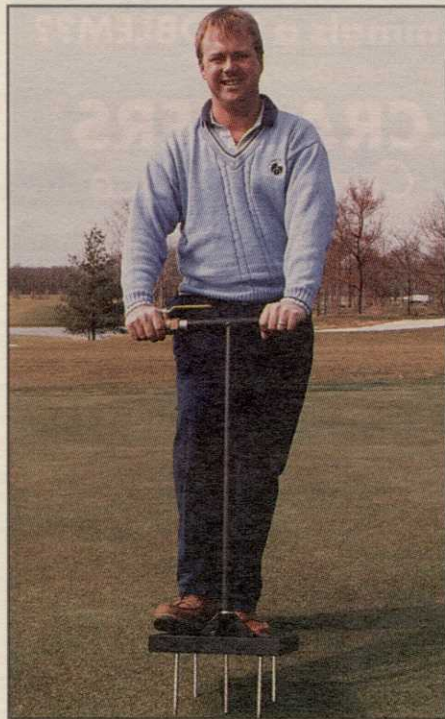
"Before, we were spending two hours for one little spot and still not wetting it. These hydrophobic areas do not accept water. But if it's 90 degrees out there, you've got to get it wet."

Lemons discovered the near-universal problem with "hot spots," or "dry spots" — small droughty patches of turfgrass — before his career actually began.

As a student at Murray State University in Murray, Ky., he designed and built a turfgrass research area and worked with golf course designers Jack Kidwell and Dr. Michael Hurdzan on the university course. His curiosity was peaked to find a solution to treating dry spots.

A friend, Roger Schmitt, had developed a bowl to force water into dry spots. Lemons found it "somewhat effective, but it had some limiting factors. I was still thinking about my own solution."

He moved from Princeton (Ky.) Country



Lemons with his Wetting Fork.

Club — where he helped with construction — to Old Hickory in December 1985.

Like elsewhere, he found greens suffering from dry spots. To solve the problem, he began with the documentation by Dr. Keith Karnock of the University of Georgia that the spots are caused by micro-organisms secreting a waxy material that adheres to the soil particles. Once the area gets slightly dry, the particles actually repel water.

"When an aerification hole is made in a green, the water runs through the soil and does not wet these dry spots," Lemons said. "I began to realize that the only way to saturate those areas would be to force the water in. The idea of flooding the dry spot was not new. Superintendents have hand-watered these spots on the surface to get the underground spots wet, using pitch forks, aerification tines and other water-injecting aerifiers."

"But, again, either the water would run off the surface before going into the soil or

it would run through the soil, leaving the soil particles still dry. This results in the turfgrass suffering from drought and can cause death to the turf."

Shunning thoughts of the expense and redtape involved in inventing and patenting a piece of equipment, Lemons made the prototype for the Wetting Fork. The creature of steel and galvanized pipe weighed 30 pounds, was difficult to handle and its tines broke easily.

That was the bad news. The good news was that the Wetting Fork put enough water to flood the subsurface area, not just punch a pinhole in the surface.

Today's version weighs 11 pounds. It is made of stainless steel and heavy-gauge aluminum. Its tines won't rust, break or bend. A 400 PSI ball valve controls the amount of water that can be injected into the spots. And a nylon adapter is included so the superintendent can use either a 3/4- or one-inch hose.

The six-inch tines saturate the ground to 12 inches deep. The water pressure also horizontally fractures the subsurface, Lemons said. "If you have a compacted area, it will be very helpful because compaction usually happens in the top three inches."

Holland said he intends to use his Wetting Fork on his fairways because of their heavy sloping.

"The upper areas of a slope will get dry," he said. "If we water it enough to get it wet enough, the bottom part gets swampy. That's the area I envision using it [the fork] the most."

Lemons said use of a pellet wetting agent applicator is also effective in keeping areas wet.

"We can finally get these wetting agents down into the problem area where they are needed, instead of on the surface where leaf tip burn can occur," he said.

Some superintendents are injecting fertilizer and insecticides with the Fork.

Besides the Wetting Fork's speed and quick payback, Holland viewed his investment as one of aesthetics — "keeping your course looking better."

Inventor looks toward Asia

HERMITAGE, Tenn. — Just last year Jerry Lemons formed The Thinking Superintendents Co., a Division of Golf Links Inc., to handle manufacture and sales of his inventions. Now he is negotiating with Asian representatives to expand his horizons.

"Hopefully, by mid-summer we will have the details worked out," Lemons said.

The Fork sells for \$349 but shipping costs to the Pacific Rim were too high, Lemons said. He cited the \$112 fee to send one unit from Tennessee to Taiwan.

"I've sold some units in Canada and have had a lot of interest," he said. "But when you start a small company like this, you have to grow small."

He contracted a Nashville metal fabrication firm to assemble an initial 1,200 Wetting Forks.

Lemons said more than 100 Wetting Forks are "out in the field," and sales were brisk at his booth at February's International Golf Course Conference and Show in Anaheim, Calif.

The Thinking Superintendents Co. is located at 101 Oak Hollow, Hermitage, Tenn. 37076; telephone 615-883-8153.



Lemons demonstrates his cup cutter.

Conquering crooked cups

The phrase "Get It Straight" means more to golf course superintendents than the average person. Its more significant meaning spurred Jerry Lemons to devise his second invention.

"How many times have you looked down your course and noticed a flag pole leaning?" asked Jerry Lemons. "Almost all superintendents are faced with making sure cups are perfectly vertical, perfectly straight. One trip by a greens chairman to your office can start the thinking process."

And that's what happened, leading Lemons to find a solution to crooked flag poles.

The result is "Cut It Straight," a circular level that can be mounted on any cup cutter.

"When the first prototype was built, the staff found cutting straight cups to be one of the easiest jobs on the course," Lemons said.

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Superintendents have several new options for applying wetting agents to their turf, including systems using direct soil injection.

Last year, Toro advanced the direct soil injection method with the introduction of a new water injection aerator, the HydroJect 3000. Recently, Toro approved the use of Hydro-Wet, a wetting agent manufactured by Kalo, Inc., with its HydroJect 3000.

"The results (of wetting agents) are enhanced when



Dosmatic® Plus injection systems include a mobile option, mounted on its own cart.

the wetting agent is applied after a water aeration treatment," notes Ben Street, a market manager for The Toro Company's Commercial Products Division.

Direct soil injection of wetting agents has taken another step forward with the introduction of the Dosmatic Plus,

a convenient alternative to portable tank sprayers. As a mobile accessory, Dosmatic's water-powered liquid injector, applies Hydro-Wet through the HydroJect 3000 in proportional amounts to the water flow.

For more information on direct soil injection of wetting agents, circle the number below, or call Kalo, Inc., toll-free: 1-800-255-5196.



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CIRCLE #157

Superintendents Use Wetting Agents to Battle Dry Spots.

Golf's rapid increase in popularity has created added pressures on superintendents to maintain the lush, green look golfers have come to expect.

Superintendents have to achieve this look while also coping with increased traffic, changing attitudes toward the use of pesticides and, often, restrictions on water use.

One especially difficult condition they face is localized dry spot, which normally occurs in mid-summer, at the height of the golf season.

"Because most greens have high sand content, keeping moisture in the root zone during the summer can be a challenge regardless of moisture availability," notes Chuck Champion of Kalo, Inc., which manufactures Hydro-Wet®, a wetting agent.

Hydro-Wet has continued to top university tests where residual value among wetting agents has been compared. In tests at Michigan State University, for example, Hydro-Wet delivered 53% more moisture to the root zone and exhibited 23% greater staying power than the closest competitive brand.

In another field test conducted by Michigan State University, Hydro-Wet injected directly into the sub-surface area with the new Toro HydroJect aerator effectively relieved heat stress on greens. The study also found Hydro-Wet to be the most effective wetting agent over a longer period of time.

For a copy of these Michigan State University studies, circle the reader service number below or call Kalo, Inc., toll-free: 1-800-255-5196.

The Hydro-Wet® Story Still Holds Water After 20 Years.

RESIDUAL EFFECTS OF TURF WETTING AGENTS TESTS CONDUCTED BY MICHIGAN STATE UNIVERSITY

Wetting Agent	% Soil Moisture 14 months after application	Turfgrass Quality (1 = best)
None	5.4%	4.2
AquaGro®	6.7%	3.4
Hydro-Wet®	8.3%	2.1

Refer: Michigan Turfgrass Proceedings, Vol. 4, Jan. 1975
Boyne Highlands Golf Course
Applied July 1973, Evaluated September 1974

**STAYS LONGER!
GREAT FOR EARLY
APPLICATION**

No other wetting agent can match the staying power of Hydro-Wet. So no wetting agent does as much to increase water efficiency.

This staying power is shown in this test. Fourteen months after application, turf treated with Hydro-Wet delivered 53% more moisture to the root zone. What's more, Hydro-Wet had 23% greater staying power than AquaGro.

And the quality of the Hydro-Wet treated turfgrass was significantly better. Hydro-Wet rapidly moves water into the soil where it belongs. Hydro-Wet ensures uniform infiltration and reduces runoff and evaporation. Hydro-Wet boosts soil moisture, which is so important to turfgrass during periods of moisture stress.

Best of all, the same Hydro-Wet formulation has been successful in university trials and on America's golf courses for 20 years.

For the number of your nearest distributor, call, toll free: 1-800-255-5196.

Hydro-Wet
Keeps Water In Its Place



KALO Kalo, Inc. 4550 W. 109th Street Overland Park, KS 66211

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CIRCLE #156

CIRCLE #158

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The 2000 Series Utility Trucks are tough, dependable vehicles in your choice of gas or diesel models. A wide selection of available attachments allows you to perform virtually all your turf maintenance chores with a single vehicle.

Dress for success.

For consistent, even top dressing of greens and tees, our unit features quiet, smooth operating hydraulic drive. The 31.5" swath and an 11.5 ft³ capacity let you cover a lot of ground between refills.

Spread your wings and fly... with our high-capacity sprayer. A variety of boom sizes and accessories are available, so you can spray tees, fairways and other large turf areas with maximum efficiency.

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For even greater versatility, add our universal mounting kit which enables quick change-out of many leading manufacturers' attachments, like this precision broadcast, high-volume spreader.

Put it there...

quickly and effortlessly with our 16.6 ft³ dump box. It comes complete with cargo tie-down, double-hinged tailgate and heavy-duty hydraulic lift—standard on our diesel truck.

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with our pull-behind, 48" aerator or mounted, three-drum, 42" unit, to revitalize turf quickly and easily.

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Select our 810 Express™ for half ton, 12.2 ft³ capacity in a quiet, reliable utility truck. Unit features heavy-duty suspension and rugged, solid steel body for longer life.

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